Research Report No. 17
January, 1966

Measured crop performance

Part I Corn Hybrids
Part II Grain Sorghum
Part III Corn and Sorghum Silage
Part IV Soybeans
Part V Cotton

1965

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PERFORMANCE OF CORN HYBRIDS, GRAIN SORGHUM, CORN AND SORGHUM SILAGE, SOYBEANS AND COTTON IN NORTH CAROLINA [1/]

John C. Rice, R. W. Mozingo, E. L. Jones and G. C. Oliver

Corn, grain sorghum, silage, soybeans, and cotton are produced in the same general areas of North Carolina. To make the data on each of these crops easily accessible, the tests results are compiled in one bulletin.

Part I is concerned with corn hybrids in all production areas of the state. Part II deals with grain sorghums, primarily in the Piedmont. Data from these tests would be applicable to most areas of production in North Carolina. Part III covers data on corn and sorghum silage. Both crops are used for silage and the choice is dependent on which fits best in the farm operation. Part IV has the data on soybeans, a crop which has been increasing in acreage each year. Part V contains the data on cotton performance and lint characteristics.

Each part is complete in that it contains information on experimental procedure, locations of the tests, a discussion of the data and the data for 1965 [2/], as well as summary tables for the past two and three years.

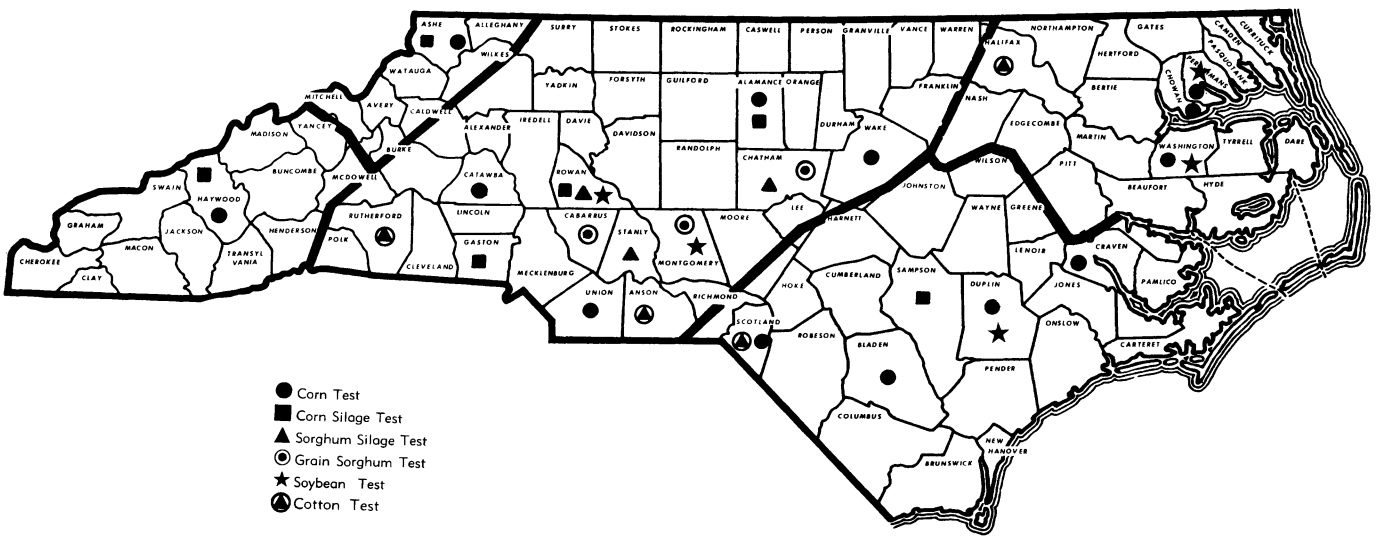
It is hoped that the organization of this bulletin will provide data to those interested in the various crops in a complete form which is readily available. The large number of hybrids and varieties available for planting within this state makes it mandatory that information be available to seedsmen, growers and agricultural workers so that easy comparisons can be made.

[1/] The Official Variety Testing Program recognizes the co-operative spirit and civic-minded service rendered by the farmers who have furnished, prepared and cultivated the land for these trials.

The Agricultural workers in their respective areas contribute much to the success of these tests by aiding in the location of test sites, by holding field meetings, and also by their utilization of the information obtained.

[2/] Statistical analyses were made in the Statistical Laboratory and Computing Center under the supervision of John O. Rawlings, Frank Verlinden, R. D. Weems and Joe Snavely. This assistance is gratefully acknowledged.

FIGURE 1. — LOCATION OF OFFICIAL VARIETY TEST 1965



CO-OPERATORS 1965

Corn

Area I - Northern Mountains
Ashe County, Upper Mountain Res. Sta., Dana G. Tugman, Superintendent, Laurel Spring, N. C., Extension Chairman A. B. Addington and assistants, co-operating.

Area II - Southern Mountains
Haywood County, Mountain Res. Sta., J. R. Edwards, Superintendent, Waynesville, N. C., Extension Chairman V. L. Holloway and assistants, co-operating.

Area III - Piedmont
Wake County, Farm of Freeman Buffaloe, Garner, N. C.
Extension Chairman W. G. Miller, Jr. and assistants, co-operating.
Alamance County, Farm of Raymond Braxton, Snow Camp, N. C.
Extension Chairman G. R. Coble and assistants, co-operating.
Catawba County, Farm of Dewey Hunsucker, Conover, N. C.
Extension Chairman J. F. Giles and assistants, co-operating.
Union County, Farm of Earl Haigler, Monroe, N. C.
Extension Chairman J. A. Marsh and assistants, co-operating.

Area IV - Southern Coastal Plain
Duplin County, Farm of W. G. Sullivan, Mt. Olive, N. C.
Extension Chairman V. H. Reynolds and assistants, co-operating.
Craven County, Farm of C. L. Humphrey, Dover, N. C.
Extension Chairman A. T. Jackson and assistants, co-operating.
Scotland County, Farm of Eli Murry, Laurinburg, N. C.
Extension Chairman K. V. Perkins, co-operating.
Bladen County, Farm of R. A. Rooks, Kelly, N. C.
Extension Chairman L. R. Sasser and assistants, co-operating.

Area V - Northern Coastal Plain - Full Season
Northampton County, Farm of J. C. Long, Margettville, N. C.
Extension Chairman B. H. Harrell and assistants, co-operating.
Pitt County, Farm of J. A. Parker, Fountain, N. C.
Extension Chairman S. C. Winchester and assistants, co-operating.
Nash County, Farm of Cooper Smith, Nashville, N. C.
Extension Chairman J. P. Woodard and assistants, co-operating.

Area V - Northern Coastal Plain - Short Season
Chowan County, Farm of R. L. Bunch, Edenton, N. C.
Extension Chairman C. W. Overman and assistants, co-operating.
Washington County, Farm of Leon Dunbar, Pantego, N. C.
Extension Chairman Guy M. Whitford and assistants, co-operating.
Perquimans County, Farm of E. E. Morgan, Hertford, N. C.
Extension Chairman R. M. Thompson and assistants, co-operating.

Corn Silage

Area I - Northern Mountains
Ashe County, Upper Mountain Res. Sta., Dana G. Tugman, Superintendent, Laurel Springs, N. C., Extension Chairman A. B. Addington, co-operating.

Area II - Southern Mountains
Haywood County, Mountain Res. Sta., J. R. Edwards, Superintendent, Waynesville, N. C., Extension Chairman V. L. Holloway, co-operating.

Area III - Piedmont
Gaston County, Farm of Howard Harrelson, Cherryville, N. C.
Extension Chairman M. G. Erwin and assistants, co-operating.
Alamance County, Farm of Paul McBane, Snow Camp, N. C.
Extension Chairman G. R. Coble and assistants, co-operating.
Rowan County, Piedmont Res. Sta., Clyde McSwain, Superintendent, Salisbury, N. C.
Extension Chairman R. R. McNeely and assistants, co-operating.
Area IV - Southern Coastal Plain
Sampson County, Farm of Maxton Bass, Newton Grove, N. C.
Extension Chairman W. W. Gurkin and assistants, co-operating.

Sorghum Silage

Rowan County
Piedmont Res. Sta., Clyde McSwain, Superintendent, Salisbury, N. C.
Extension Chairman R. R. McNeely and assistants, co-operating.
Chatham County
Horace Mann, Pittsboro, N. C.
Extension Chairman J. B. Snips and assistants, co-operating.
Stanly County
Spurgeon Brooks, Richfield, N. C.
Extension Chairman V. A. Huneycutt and assistants, co-operating.

Grain Sorghum

Cabarrus County
Ralph O. Simmons, Kannapolis, N. C.
Extension Chairman J. R. Allen and assistants, co-operating.
Chatham County
Russell and Eugene Johnston, Siler City, N. C.
Extension Chairman J. B. Snipes and assistants, co-operating.
Montgomery County
E. T. Gaddy, Mt. Gilead, N. C.
Extension Chairman A. M. Garris and assistants, co-operating.

Soybeans

Rowan County
Piedmont Res. Sta., Clyde McSwain, Superintendent, Salisbury, N. C.
Extension Chairman R. R. McNeely and assistants, co-operating.
Montgomery County
Homer Haywood, Mt. Gilead, N. C.
Extension Chairman A. M. Garris and assistants, co-operating.
Duplin County
W. G. Sullivan, Mt. Olive, N. C.
Extension Chairman V. H. Reynolds and assistants, co-operating.
Washington County
Leon Dunbar, Pantego, N. C.
Extension Chairman Guy M. Whitford and assistants, co-operating.
Perquimans County
L. B. Elliott, Hertford, N. C.
Extension Chairman R. M. Thompson and assistants, co-operating.

Cotton

Anson County
Thomas S. Thyne, Cheraw, S. C., Box 428, Route 1
Extension Chairman J. R. Potter, Jr. and assistants, co-operating.

Rutherford County
Van McDaniels, Ellenboro, N. C.
Extension Chairman J. A. Crawford and assistants, co-operating.

Scotland County
A. F. McMillian, Laurinburg, N. C.
Extension Chairman K. V. Perkins, co-operating.

Halifax County
W. L. Pickett, Scotland Neck, N. C.
Extension Chairman Clyde Peedin and assistants, co-operating.

Part I

CORN HYBRIDS

The performance of different corn hybrids in different areas of the state depends on their adaptation of the environmental conditions within the area in which they are to be grown. The performance of varieties in five different areas of North Carolina is reported in this bulletin.

The data provides information on the performance of commercial and experimental hybrids grown in various geographic areas of the state. Information of this nature serves as a guide to corn breeders in the development of hybrids and also provides a guide to agricultural workers and growers in choosing hybrids to plant that will perform well in their respective area.

A top performing hybrid is one that will consistently give high returns to the grower. It must have a good yield and standability as well as other desirable characteristics including adaption to mechanical harvesting. In order to properly evaluate a hybrid for a particular area, data from several locations over a period of years is desirable. However, it is only after a hybrid has been planted under farm conditions that it really receives its most thorough evaluation.

Results of the North Carolina Official Corn Trials for the 1965 season are presented in this report. Two and three year summaries are also presented.

EXPERIMENTAL PROCEDURE

Commercial and experimental hybrids developed by public and private agencies are included in this program. One requirement for inclusion is quantitative data from experiments in which the proposed entry is compared with recognized hybrids. These data must reveal meritorious performance in order for a hybrid to qualify for the test.

Entering Hybrids

Any individual or firm may make application for having hybrids tested. A fee is charged on an entry per area basis. Personnel of the testing program may also include entries about which further information is desired.

Early in February each year, rules governing the tests for the ensuing year are distributed to all previous participants and to those who make inquiry.

Agencies sponsoring entries in the 1965 tests are shown in Table 1.

Table 1. Name and address of sponsoring agencies in the 1965 North Carolina Corn Performance Trials along with designation used to identify the hybrids in the trials.

Name	Address	Hybrid Designation
Ag. Alumni - Purdue Univ.	Lafayette, Ind.	AA
Asgrow Seed Company	Atlanta 2, Georgia	Asgrow
Beam's Farm	Lawndale, N. C.	B & B
Britt, Woodrow & Sons	Chadbourn, N. C.	Britt
Coker Pedigreed Seed Co.	Hartsville, S. C.	Coker
Cotton Hybrid Research, Inc.	Athens, Georgia	CHR
DeKalb Agri. Assn., Inc.	DeKalb, Illinois	DeKalb
Edmund and Son Seed Co.	Chadbourn, N. C.	Edmund
Excel Sorghum Company	Plainview, Texas	Excel
Greenwood Seed Co.	Thomasville, Georgia	Greenwood
Hollyview Farms	Mt. Airy, N. C.	Hollyview
Ken-Bred Hybrids	Danville, Kentucky	Ken-Bred
Langley, C. G.	Stanly, N. C.	Langley
McCurdy Seed Co., Inc.	Fremont, Iowa	McCurdy
McNair Seed Co., Inc.	Laurinburg, N. C.	McNair
N. C. Agric. Expt. Sta.	Raleigh, N. C.	N. C.

Table 1. Continued.

Name	Address	Hybrid Designation
Pfister Assoc. Growers, Inc.	Aurora, Illinois	P.A.G.
Pioneer Corn Company, Inc.	Tipton, Indiana	Pioneer
R. R. Best and Sons	Faison, N. C.	Best
Ray Taylor Farms	Tifton, Georgia	Taylor
S. C. Agric. Expt. Sta.	Clemson, S. C.	S. C.
Speight Seed Farms	Winterville, N. C.	Speight
T. W. Wood and Sons	Richmond, Virginia	Wood
Todd Hybrid Corn Co.	Mt. Airy, Maryland	Todd
Tomahund Plantation	Williamsburg, Virginia	Hofmeyer's
Virginia Agric. Expt. Sta.	Blacksburg, Virginia	V.P.I.
Wagwood Farms, Inc.	Gibsonville, N. C.	Wagwood
Watson Seed Farms	Rocky Mount, N. C.	Watson
Watson, Van	Whitakers, N. C.	Van's

Field-Plot Technique

The state is divided into five geographical areas according to soil type, maturity zone, and climatic conditions. The various areas and co-operators are shown in Figure 1. Where feasible, three or more locations with four replications were used in each area. In each of the mountain areas, (Areas I and II) where the acreage of corn is less, one location with six replications was used. Four locations, with four replications each, were used in Area III and Area IV. Area V had three locations with four replications each for full season entries and three locations with four replications each for short season entries.

The practice in the Northern Coastal Plain area, where short season corns are grown on many farms, is toward planting high populations and fertilizing

heavy. The 1965 tests were planted 8 inches in the drill. Soil tests were made and fertilization was applied in accordance with recommendations. An additional 50 pounds of liquid nitrogen at topdressing time was applied on each of the short season test in Area V.

Depending upon the number of entries, the following experimental designs were used: A 5 x 6 and 7 x 7 triple rectangular lattice and a 7 x 8 and 7 x 7 simple rectangular lattice. Data were analysed by locations and combined over locations within an area. Only the combined data are shown.

A cone hopper was mounted on a John Deere planter and the tests were mechanically planted. Fifty percent extra kernels were planted and the plots were thinned to plants 12 inches apart in the row. Row width of the various tests were 40 inches. The plots were two rows wide and 15 feet long with 15 kernels planted per row, except for the short season tests, which had 21 kernels per row. The alley width was 4 feet which was required for mechanical planting and harvesting.

A mixed fertilizer was applied at planting with a fertilizer attachment on the planter and the plots were topdressed with adequate nitrogen to give a medium to high fertility level. Simazine was used as a herbicide on most tests at planting. At layby, herbicides were applied in the form of liquid nitrogen, 2, 4-D and Lorox or Atrazine to control late grass and weeds. Excellent weed control was obtained in most tests. Cultural practices for each of the tests are shown in Table 2. Planting, collecting data, and harvesting were directly supervised by personnel of the North Carolina Agricultural Experiment Station.

A two row picker-sheller was slightly modified for harvesting individual plots. Grain from individual plots was caught as it came from the elevator and weighed. The combine was stopped at the end of each plot for a short interval of time in order for the machine to clean out between plots prior to

Table 2. Cultural practices used on the corn test.

Area and Co-operator	Fertilizer lbs/A	Herbicide [1] Pre emerge	Top Dressing lbs/A	Row Spacing Inches	Date of Planting	Date of Harvest
Area I						
Upper Mt. Res. Sta.	500, 10-20-20		130	40"	May 12	Oct. 29
Dana G. Tugman		Simazine	ammon.nit.			
Area II						
Lower Mt. Res. Sta.	300, 5-10-10		130	40"	May 11	Nov. 17
J. R. Edwards	300, 10-20-20	Simazine	liq. nit.			
Area III						
Raymond Braxton, Alamance County	300, 10-20-20	Simazine	130 liq.nit.	40"	May 5	Sept. 29
Dewey Hunsucker, Catawba County	300, 10-20-20	Simazine	130 liq.nit.	40"	May 10	Oct. 26
Earl Haigler, Union County	300, 10-20-20	Simazine	130 liq.nit.	40"	May 10	Oct. 18
Freeman Buffaloe, Wake County	300, 10-20-20	Simazine	130 liq.nit.	40"	May 3	Sept. 17
Area IV						
Ruben A. Rooks, Bladen County	300, 10-20-20	Simazine	130 liq.nit.	40"	Apr. 14	Test discarded
C. L. Humphrey, Craven County	300, 10-20-20	Simazine	130 liq.nit.	40"	Apr. 12	Sept. 8
W. G. Sullivan, Duplin County	300, 10-20-20	Simazine	130 liq.nit.	40"	Apr. 21	Sept. 16
Eli Murry, Scotland County	300, 10-20-20	Simazine	130 liq.nit.	40"	Apr. 14	Sept. 8
Area V - Full Season						
Cooper Smith, Nash County	300, 10-20-20	Simazine	130 liq.nit.	40"	Apr. 20	Sept. 10
J. C. Long, Northampton County	300, 10-20-20	Simazine	130 liq.nit.	40"	Apr. 22	Sept. 28
J. Allen Parker, Pitt County	300, 10-20-20	Simazine	130 liq.nit.	40"	Apr. 16	Sept. 9
Area V - Short Season						
Robert L. Bunch, Chowan County	600, 5-10-10	Simazine	180 liq.nit.	40"	Apr. 15	Sept. 1
E. E. Morgan, Perquimans County	600, 5-10-10	Simazine	130 liq.nit.	40"	Apr. 15	Aug. 31
Leon Dunbar, Washington County	300, 10-20-20	Simazine	180 liq.nit.	40"	Apr. 16	Sept. 1

[1] Top dressed with liquid nitrogen and 14 oz/A of 2, 4-D. When needed 1 1/4 lbs. of Lorox or 1 lbs/A of Atrazine was used at layby to control grass.

weighing the corn from the plot. The machine appeared to give very satisfactory results. A sample of corn was taken from each plot for moisture determination. A picker-sheller was used to more nearly simulate the conditions under which these corns would be harvested on farms. The only corn harvested was that which came through the picker-sheller. If the machine failed to pick up a stalk due to lodging, this corn was not harvested. The tests in Areas I and II were harvested by hand.

Seasonal Conditions

The 1965 growing season in North Carolina was generally favorable for the production of corn with the exception of excess moisture in some of the specific test locations. Good moisture conditions existed at all locations at planting time, and a good stand was obtained at all locations. After planting the Haywood test a heavy rain resulted in heavy erosion with one part of the experiment being destroyed.

The Haywood County test suffered from a continued period of dry weather up until the middle of August. This lack of moisture caused low yields in this test similar to the same condition in 1964.

In the Piedmont area all four locations had good moisture throughout the growing season. The Union County test was planted in a low area and excess water damaged two replications in this experiment. All tests had average growth and data was combined for the Piedmont area over four locations.

The Southern Coastal Plain area had good growing conditions throughout the season with the exception of excess moisture at two locations. The Bladen test was lost because of water damage and the Scotland test had low yields as a result of extreme sandy conditions and heavy rainfall. All locations had excellent standability and all were harvested by machine. The mean of the test for this location was somewhat lower than last year due to excess rainfall in some areas.

The Northern Coastal Plain Full Season locations had good moisture at planting and throughout the growing season. The tests were uniform at Northampton, Nash and Pitt Counties with average yields. All of these locations were harvested by machine and all replications were complete. The Short Season Test was located in Washington, Chowan and Perquimans Counties. All of these tests were uniform and had good growing conditions. The Washington test suffered from poor stand in one replication. The mean of the test was more than for 1964.

Data

Data were collected on each plot at each location on yield, stand, moisture, lodging, ear height, ears per 100 stalks, exposed ear tips, and quality. Statistical analyses were made on each of the above listed characters for individual locations and combined over locations within an area. The C. V. and L. S. D. are listed at the bottom of the various columns of the 1965 tables Variety x location mean squares were used to compute the L. S. D.'s. Only the summary data by areas are shown for 1965. Comparisons of hybrids should be made only within areas and not between areas since soil and climatic conditions differ so greatly.

The percentage data presented in this report were not transformed and the L. S. D. and C. V. values listed are for the untransformed data. This resulted in the C. V.'s and L. S. D.'s being rather high for percent lodged and percent ear tips exposed.

Stand and Yield Adjustments

All plots having less than a 70 percent stand were adjusted to 70 percent of the maximum stand for statistical analysis. Any plot having a stand of 70 percent or above was not adjusted.

Yield adjustments were made by determining the average yield per plant of

the particular variety in unadjusted plots and multiplying this value by the adjusted number of plants.

Yield

Weight of shelled corn was obtained by harvesting and weighing each plot and each entry at each location. Any location harvested by hand was weighed for ear corn and converted to shelled corn basis. All plot yields were adjusted to 15.5 percent moisture.

Stand

Stand percent was determined by counting the number of plants per plot and dividing by 30 for the normal population tests and 42 for the high population tests.

Moisture at Harvest

Moisture content of grain at harvest is an index of maturity. Moisture percentage was determined from samples obtained from each plot at each location except where the tests were harvested by hand, then moisture data were taken on alternate replications. Samples were obtained by taking a sample from each plot immediately after the grain was weighed. The samples were placed in water-proof plastic-coated paper bags and analysed shortly thereafter on a Tag Heppenstall moisture meter.

Lodging

Lodging is a term used to describe stalks that are broken, leaning or fallen to the ground. All plants broken below the ear or leaning more than 45° are considered lodged. Data were taken on each plot and a lodging percent calculated.

Ear Height

Ear height was determined by measuring the distance from the ground to the node where the ear is attached to the stalk.

Ears Per 100 Stalks

The number of ears per 100 stalks is a measure of prolificness and indicates whether a hybrid tends to be a single-ear or prolific type. Ears per plot were counted in each replication at every location prior to harvest. Ears per plot divided by plants per plot give the number of ears per plant. This figure multiplied by 100 gives the number of ears per 100 stalks. A fallacy in this method is that the count is made without shucking the corn out so some undeveloped ears may be counted.

Exposed Ear Tips

The number of exposed ear tips were counted in each plot. This number divided by the total number of ears per plot gives percent exposed tips.

Quality

Quality readings are based primarily on ear rot damage. The following scale was used to determine rating:

Rating	Per Cent of Damage Per Plot
1	0 - 10
2	10 - 20
3	20 - 30
4	30 - 40
5	40 - 50

The data were taken on each plot on the shelled corn, except where the tests were hand harvested; then it was taken on the ears.

Diseases

The reaction of hybrids to the major corn diseases (including the common leaf blights) is evaluated yearly. It is difficult to make adequate comparisons of hybrids over a period of successive years due to the fact that all hybrids are severely damaged during years of severe disease development. Preliminary observations indicate little difference in reaction of hybrids to the common leaf blight present in the Coastal Plain Area.

Insect Damage

Weevils and other stored grain insects often cause kernel damage to ears of corn before they are harvested. The tests included in this report were all harvested relatively early; therefore, stored insect damage was negligible. Where it occurred, quality was reduced.

RESULTS

Data are presented by areas for three year, two year and one year performance. Hybrids are divided into four groups in the tables, commercial yellow and white, and experimental yellow and white hybrids.

There are numerous corn hybrids available to farmers for planting. These hybrids differ in yield, maturity, lodging, disease and insect resistance, grain quality and other factors. Hybrids that are outstanding in one or more characteristics may be inferior in others and should, therefore, be selected on the basis of over-all performance.

Hybrids tested more than one year have a more accurate estimate of their general performance since they have been tested under more diverse environments. Growers should select a top performing hybrid for planting. A top performer is not necessarily the highest yielder, but it should have a high yield, mature within the desired time, stand upright at harvest, and also be reasonably good in other agronomic characteristics. All hybrids yielding above the mean of the test would be considered reasonably good performers.

The 1965 tests for all areas were fairly good and the performance should be representative of the hybrids. Comparisons can be made directly in these summary tables. Hybrids with a low percent of lodging in these tests would be considered to have a good root system and strong stalk.

Short season corn is early maturing and is usually sufficiently dry to be harvested and marketed in late August and early September. This type supplies

an early (August and September) market demand, and the production of it has been limited primarily to the northeastern counties. The short season corn is primarily grown for early market. The keeping quality of the short season hybrids is usually inferior, and unless the grower exercises extra precautions, the quality and feed value are likely to deteriorate rapidly from insect damage. Short season hybrids are usually less suitable for storing on the farm because of this rapid deterioration.

For general farm storing and feeding, full season corn is more likely to preserve its quality and usually is damaged less by insects. Full season corn requires from two to three weeks longer than short season hybrids to reach maturity and to become sufficiently dry to harvest and store. Usually, full season corn is dry enough to be harvested and stored in late September.

Table 3. Comparison of hybrids for certain characteristics

Northern Mountains - Area I

Three-Year Average - 1963, 1964, 1965

Average of 3 locations

Hybrid	Yield Bus/A	Stand %	Moisture %	Lodging %	Ear Height Inches	Ears/100 Stalks	Ear Tips Exposed %	Quality
			Commercial Hybrids Yellow Entries					
Pioneer 345-A	123	99	28.64	10	48	138	25	2.4
Pioneer 310	122	98	34.19	5	53	170	20	1.9
Pioneer 3166	118	98	31.51	5	52	120	45	2.7
DeKalb 805	114	98	28.67	1	51	109	31	1.6
DeKalb 640	113	98	29.26	4	55	166	17	2.1
Best X-3	111	94	33.90	6	60	151	32	2.8
DeKalb 624	109	96	28.17	4	49	139	30	1.9
Mean of Test	107	97	29.86	6	52	133	33	2.2
Woods V-26Y	102	97	28.44	7	49	115	36	1.8
V.P.I. 648	100	97	29.76	8	53	116	52	1.7

Table 4. Comparison of hybrids for certain characteristics

Southern Mountains - Area II

Three Year Average - 1963, 1964, 1965

Hybrid Designation	Yield Bus/A	Stand %	Moisture %	Lodging %	Ear Height Inches	Ears/100 Stalks	Ear Tips Exposed	Quality
			Commercial Hybrids Yellow Entries					
Pioneer 310	111	94	21.88	8	45	121	17	2.1
Pioneer 3166	110	92	21.12	11	41	107	32	2.9
Hollyview 160	108	93	19.57	10	49	113	30	2.4
McCurdy M97	105	92	22.41	18	49	113	15	1.8
DeKalb 805	105	94	19.51	5	44	99	23	2.4
Pioneer 309B	102	97	26.18	5	47	133	10	2.4
Pioneer 309A	100	96	24.61	9	49	114	16	2.5
Mean of Test	96	91	21.95	8	45	111	23	2.4
McCurdy 972 X 7	95	87	20.18	9	49	105	15	1.8
Best X-3	93	88	22.52	6	49	110	19	2.3
DeKalb 824	92	91	20.71	7	43	98	20	2.6
V.P.I. 648	86	86	21.37	8	42	102	35	2.2
U.S. 282	85	97	25.02	14	52	111	21	2.4
			White Entries					
Hollyview 711W	97	89	21.16	11	48	114	19	2.2

Table 5. Comparison of hybrids for certain characteristics

Piedmont - Area III

Three Year Average - 1963, 1964, 1965

Average of 8 locations

Hybrid Designation	Yield Bus/A	Stand %	Moisture %	Lodging %	Ear Height Inches	Ears/100 Stalks	Ear Tips Exposed %	Quality
			Commercial Hybrids Yellow Entries					
Wagwood 200	96	93	18.01	6	43	136	2	1.8
Pioneer 3048	93	87	18.08	5	46	135	2	1.9
Pioneer 309B	93	91	17.06	9	42	139	3	1.7
Dixie 82	92	86	18.20	13	50	151	2	1.9
Langley 1040	92	92	17.17	7	42	134	2	1.6
Wagwood 200A	91	91	17.41	7	44	130	2	1.4
N.C. 27	88	87	17.06	15	49	143	2	1.5
S.C. 236	88	89	17.84	3	46	137	1	1.4
DeKalb 1006	87	92	16.12	9	45	117	6	1.8
Pioneer 310	87	92	16.25	5	37	119	8	2.0
N.C. 270	87	88	19.99	6	46	124	2	1.6
B&B X395	87	87	18.37	6	43	124	5	1.6
Mean of Test	84	89	17.09	8	42	126	6	1.8
DeKalb 824	73	93	15.55	8	38	107	8	2.3
V.P.I. 648	70	90	15.90	4	38	105	21	2.1
			White Entries					
Dixie 29	97	90	17.18	15	45	153	3	1.3
Coker 911	90	92	17.22	8	45	145	3	1.3
McNair 425	87	89	17.61	11	45	146	3	1.4

Table 6. Comparison of hybrids for certain characteristics

Southern Coastal Plain - Area IV

Three Year Average - 1963, 1964, 1965

Average of 11 locations

Hybrid Designation	Yield Bus/A	Stand %	Moisture %	Lodging %	Ear Height Inches	Ears/100 Stalks	Ear Tips Exposed %	Quality
			Commercial Hybrids Yellow Entries					
P.A.G. 751	128	95	17.75	15	47	165	3	1.9
Wagwood 200	128	96	18.18	22	42	153	3	2.0
Britt 44	123	96	19.35	26	45	158	3	2.5
Pioneer 3048	122	95	17.52	19	43	136	4	2.2
Coker 67	121	97	17.77	14	47	161	2	1.8
Pioneer 309B	119	95	16.96	18	40	147	4	2.0
S.C. 236	119	95	17.88	5	45	147	1	1.6
Dixie 82	117	94	18.12	26	49	145	2	2.4
Dixie 18	117	92	18.33	15	55	149	1	1.5
N.C. 270	116	96	20.10	18	47	130	3	2.1
Mean of Test	116	96	18.05	17	44	142	4	2.0
Greenwood 437	115	95	19.49	15	44	154	1	1.5
N.C. 27	115	96	16.91	27	48	144	4	2.2
Greenwood 471	115	94	18.16	16	48	148	1	1.6
Coker 71	115	94	18.03	12	47	157	3	1.6
DeKalb 1213	114	97	17.18	16	49	138	4	2.1
Best X-7	111	94	19.74	19	45	130	9	2.1
Speight D-14	109	96	18.09	18	41	126	2	1.8
DeKalb 1006	104	97	16.16	20	45	122	5	2.2
			White Entries					
Coker 911	126	97	16.99	21	46	152	3	1.8
McNair 425	122	97	17.41	22	46	152	4	1.7
Coker 811A	122	95	18.06	15	44	161	1	1.5
Dixie 29	112	94	16.98	27	44	149	3	2.1

Table 7. Comparison of hybrids for certain characteristics

Northern Coastal Plain - Area V

Three Year Average - Full Season - 1963, 1964, 1965

Average of 8 locations

Hybrid Designation	Yield Bus/A	Stand %	Moisture %	Lodging %	Ear Height Inches	Ears/100 Stalks	Ear Tips Exposed %	Quality
			Commercial Hybrids Yellow Entries					
P.A.G. 751	109	96	23.16	7	46	132	6	1.7
Pioneer 309B	109	94	21.19	9	40	130	9	1.6
Pioneer 3048	107	92	22.84	7	44	124	5	1.8
Dixie 82	106	96	23.12	9	49	129	5	1.9
Pioneer 309A	106	94	20.91	9	41	114	10	1.6
S.C. 236	103	96	23.13	6	48	131	4	1.3
DeKalb 1006	101	97	20.68	10	47	116	13	1.8
Mean of Test	100	95	22.53	8	43	122	8	1.7
N.C. 270	97	96	25.16	9	45	115	6	1.6
			White Entries					
Coker 911	107	96	21.96	10	45	135	9	1.4
Dixie 29	100	94	21.14	17	44	129	5	1.5

Table 8. Comparison of hybrids for certain characteristics

Northern Coastal Plain - Area V

Three Year Average - Short Season - 1963, 1964, 1965

Average of 8 locations

Hybrid Designation	Yield Bus/A	Stand %	Moisture %	Lodging %	Ear Height Inches	Ears/100 Stalks	Ear Tips Exposed %	Quality
			Commercial Hybrids Yellow Entries					
P.A.G. SX-63	129	93	23.53	5	38	106	33	1.6
Pioneer 345A	120	94	21.55	10	36	106	34	1.9
Pioneer 310	118	93	25.29	4	37	105	17	1.7
Watson 401-A	118	94	25.60	5	39	103	24	1.6
P.A.G. SX-59	111	93	25.26	5	38	98	23	1.8
Best X-3	109	88	24.81	9	43	101	22	1.8
Mean of Test	108	93	23.78	7	38	102	22	1.7
Wood's V-51A	107	87	25.95	25	42	106	23	1.5
McNair X-200	102	89	23.15	5	37	97	22	1.9
V.P.I. 648	102	93	24.07	8	38	98	38	1.8
Wood's V-26-Y	101	92	22.62	9	36	101	25	1.9
DeKalb 824	100	94	23.49	9	38	99	22	2.1
Todd 706	97	89	22.61	8	37	98	18	2.0
			White Entries					
Pioneer 509	111	93	24.58	14	41	107	21	1.2
Wood's V-125W	108	89	24.79	17	43	100	15	1.4
			Experimental Hybrids Yellow Entries					
AA 842	115	94	22.27	5	39	103	25	1.7

Table 9. Comparison of hybrids for certain characteristics

Northern Mountains - Area I

Two-Year Average - 1964, 1965

Average of 2 locations

Hybrid Designation	Yield Bus/A	Stand %	Moisture %	Lodging %	Ear Height Inches	Ears/100 Stalks	Ear Tips Exposed %	Quality
			Commercial Hybrids Yellow Entries					
Pioneer 310	137	98	33.88	4	56	173	23	1.7
Pioneer 345A	132	98	28.20	7	50	137	31	2.4
Pioneer 3166	128	96	32.15	3	56	118	53	3.0
Best X-3	128	98	32.88	6	64	148	36	2.6
DeKalb 805	126	99	29.19	1	56	108	34	1.6
DeKalb 640	123	98	28.55	3	58	168	22	2.1
Ken-Bred E 20YA	122	97	29.26	8	52	130	44	2.0
Mean of Test	120	97	29.59	4	54	132	38	2.2
DeKalb 624	119	96	28.06	3	52	134	36	2.0
Pioneer 3304	118	98	32.96	2	54	118	29	1.6
Ken-Bred SX 20Y	118	94	28.56	3	55	108	39	2.2
McNair X200	116	98	29.06	0	57	109	42	1.8
V.P.I. 648	115	98	29.72	2	56	117	59	1.8
DeKalb 441	112	99	29.81	6	52	126	40	2.4
Woods V-26Y	111	96	28.76	5	53	114	44	2.1
DeKalb XL-45	106	95	26.46	0	42	125	58	2.8
			White Entries					
McNair 225	114	96	31.04	2	58	130	36	1.2
			Experimental Hybrids Yellow Entries					
DeKalb EX 4040	131	97	27.34	3	54	172	25	2.0

Table 10. Comparison of hybrids for certain characteristics

Southern Mountains - Area II

Two Year Average - 1964-1965

Average of 2 locations

Hybrid Designation	Yield Bus/A	Stand %	Moisture %	Lodging %	Ear Height Inches	Ears/100 Stalks	Ear Tips Exposed %	Quality
			Commercial Hybrids Yellow Entries					
Pioneer 3166	108	90	20.49	0	38	102	36	3.4
Pioneer 310	108	93	21.00	0	42	110	16	2.2
DeKalb 805	104	92	19.40	2	40	96	24	2.6
Hollyview 160	100	90	19.15	0	44	106	33	2.9
Ken-Bred E-20YA	99	88	20.03	4	35	108	31	2.4
Pioneer 309B	97	96	25.48	0	42	129	12	2.8
McCurdy M97	96	89	22.28	4	44	107	16	2.0
McNair X-200	92	84	19.70	1	42	94	30	2.9
Mean of Test	92	88	21.12	2	41	106	26	2.8
Pioneer 309A	90	95	24.54	4	45	102	18	2.8
DeKalb XL-65	88	92	20.74	2	36	110	27	2.9
DeKalb 824	88	89	20.00	2	40	94	25	2.8
Best X-3	87	86	21.92	0	46	106	20	2.4
McCurdy 972 X 7	86	82	20.46	6	44	102	19	2.0
Ken-Bred SX-20YA	86	79	19.30	3	36	95	44	3.2
V.P.I. 648	82	80	21.04	2	39	98	36	2.5
U.S. 282	82	98	24.40	2	48	110	18	2.6
			White Entries					
Hollyview 711W	94	86	20.86	2	46	108	19	2.8
McNair 225	82	88	21.47	5	41	92	30	2.1
			Experimental Hybrids Yellow Entries					
NC 3210	100	86	22.70	0	42	114	26	2.8
NC 3208	97	92	23.02	4	44	108	32	2.8

Table 11. Comparison of hybrids for certain characteristics

Piedmont - Area III

Two Year Average - 1964-1965

Average of 7 locations

Hybrid Designation	Yield Bus/A	Stand %	Moisture %	Lodging %	Ear Height Inches	Ears/100 Stalks	Ear Tips Exposed %	Quality
			Commercial Hybrids Yellow Entries					
P.A.G. 751	101	88	20.36	14	50	166	2	1.9
Pioneer 3048	101	90	20.32	6	46	135	3	2.1
Best X-7	100	89	21.39	8	46	140	7	2.0
Wagwood 200	98	91	19.95	9	48	148	2	2.0
Dixie 82	98	88	20.38	17	51	151	2	2.0
Langley 1040	97	90	19.34	10	42	139	4	1.8
Pioneer 309B	96	91	19.20	10	42	140	5	1.8
S.C. 236	96	88	19.70	4	46	146	1	1.3
N.C. 270	94	88	21.94	7	47	131	3	1.8
Taylor 196	94	89	20.06	6	46	154	4	1.9
DeKalb 1055	94	94	20.24	11	45	144	4	1.8
N.C. 27	92	87	19.16	20	49	144	4	1.6
Wagwood 200A	92	99	19.22	8	44	136	4	1.5
Pioneer 310	89	92	18.32	6	38	120	11	2.2
DeKalb 1006	88	94	18.16	12	46	118	8	1.8
Mean of Test	87	90	18.96	9	42	128	8	2.0
McCurdy M97	85	92	17.26	15	44	114	12	2.2
Langley 1041	84	86	20.94	8	42	120	6	2.0
B & B X395	83	84	20.35	8	42	124	6	1.9
Asgrow 302	78	90	16.84	18	42	112	9	2.4
DeKalb XL-385	78	92	17.32	7	42	105	6	2.2
DeKalb 824	70	90	17.36	10	40	110	10	2.6
V.P.I. 648	70	88	17.81	4	38	107	26	2.6
McNair X200	66	91	16.81	10	40	105	20	2.8
			White Entries					
Dixie 29	97	89	19.32	16	46	153	4	1.5
Coker 911	96	90	19.64	11	46	150	5	1.4
McNair 425	94	86	20.06	13	45	154	4	1.6
DeKalb XL-390	88	93	18.61	9	40	113	11	1.4
McNair 225	82	92	17.40	7	40	108	10	1.7
			Experimental Hybrids Yellow Entries					
NC 3207	84	89	18.40	6	40	112	26	2.8
NC 3210	82	88	17.49	14	41	115	15	2.6

Table 12. Comparison of hybrids for certain characteristics

Southern Coastal Plain - Area IV

Two Year Average - 1964-1965

Average of 7 locations

Hybrid Designation	Yield Bus/A	Stand %	Moisture %	Lodging %	Ear Height Inches	Ears/100 Stalks	Ear Tips Exposed %	Quality
			Commercial Hybrids Yellow Entries					
Wagwood 200	113	94	19.24	28	44	142	4	2.3
P.A.G. 751	112	92	18.72	20	49	154	3	2.1
Pioneer 3048	112	93	18.52	22	45	130	5	2.4
Britt 44	110	94	20.38	32	47	150	4	2.7
DeKalb 1055	110	96	18.50	21	46	142	6	1.9
McCurdy M306	110	92	19.03	26	51	156	2	2.3
Coker 67	108	96	18.74	18	49	152	2	2.0
Britt 55	108	94	19.77	17	43	130	2	2.4
Pioneer 309B	108	96	17.94	21	42	133	6	2.2
Taylor 196	108	96	18.69	21	45	144	4	2.2
Dixie 82	106	93	19.02	31	50	137	2	2.6
S.C. 236	106	95	18.78	7	47	135	1	1.6
Best X-7	104	94	20.83	22	48	126	10	2.3
N.C. 270	104	94	21.30	23	48	125	2	2.4
Coker 71	104	94	19.10	16	48	149	4	1.8
Greenwood 471	104	92	19.37	22	49	141	1	1.8
Greenwood 61	104	94	18.92	16	48	143	2	1.9
Mean of Test	104	94	19.04	20	46	134	4	2.2
DeKalb 1213	102	96	18.06	20	49	130	4	2.4
N.C. 27	102	94	17.77	34	48	134	4	2.4
Speight D-14	98	94	19.12	22	43	122	2	2.1
DeKalb 1006	96	95	16.91	24	47	118	6	2.4
Dixie 18	96	88	19.50	17	54	138	2	1.6
Greenwood 437	96	92	20.81	18	45	140	1	1.6
Asgrow 600	94	92	19.04	31	52	129	0	2.1
			White Entries					
Coker 911	110	95	17.90	26	48	142	3	2.0
McNair 425	109	96	18.42	26	46	140	4	2.0
Coker 811A	107	94	19.06	21	46	151	1	1.8
Dixie 29	104	94	18.22	31	46	139	4	2.4
			Experimental Hybrids Yellow Entries					
NC 3392	113	94	18.74	10	42	138	2	2.3
Coker 3059	102	95	17.92	9	42	134	2	1.8

Table 13. Comparison of hybrids for certain characteristics

Northern Coastal Plain - Area V

Two Year Average - Full Season - 1964-1965

Average of 6 locations

Hybrid Designation	Yield Bus/A	Stand %	Moisture %	Lodging %	Ear Height Inches	Ears/100 Stalks	Ear Tips Exposed %	Quality
			Commercial Hybrids Yellow Entries					
Pioneer 3048	98	96	23.18	10	46	115	6	1.7
P.A.G. 751	98	96	23.86	10	46	134	6	1.8
McCurdy M306	97	94	23.56	10	50	136	2	1.5
Dixie 82	96	95	23.64	12	50	122	6	2.0
S.C. 236	95	95	24.00	8	48	124	5	1.5
Pioneer 309B	93	95	21.70	12	41	116	10	1.4
Best X-7	93	94	24.70	10	47	114	17	1.8
Pioneer 309A	93	94	20.94	12	43	108	12	1.7
DeKalb 1055	90	96	23.27	14	44	124	9	1.8
N.C. 270	90	96	25.32	12	45	112	8	1.6
Mean of Test	90	95	22.99	10	44	118	9	1.7
DeKalb 1006	86	96	21.32	13	46	109	16	1.8
Speight D-14	82	93	23.67	11	40	112	6	1.5
			White Entries					
Coker 911	99	95	26.55	14	46	132	10	1.4
Dixie 29	93	94	21.70	22	44	128	6	1.5
			Experimental Hybrids Yellow Entries					
~~NC~~ 3392	97	96	22.03	7	40	120	5	2.0

Table 14. Comparison of hybrids for certain characteristics

Northern Coastal Plain - Area V

Two Year Average - Short Season - 1964, 1965

Average of 6 locations

Hybrid Designation	Yield Bus/A	Stand %	Moisture %	Lodging %	Ear Height Inches	Ears/100 Stalks	Ear Tips Exposed %	Quality
			Commercial Hybrids Yellow Entries					
Pioneer 3306	128	93	21.66	2	41	107	30	1.4
P.A.G. SX-63	124	92	22.82	6	42	108	38	1.6
McCurdy M97	120	91	24.21	10	47	110	16	1.4
P.A.G. SX-29	118	91	22.69	4	41	105	33	1.8
Pioneer 310	118	92	24.36	6	41	107	18	1.6
Watson 430	116	94	25.30	4	41	102	19	1.6
Watson 401-A	112	92	25.08	6	42	102	26	1.7
P.A.G. SX-59	110	92	24.34	6	42	101	27	1.8
Best X-3	108	92	23.53	13	46	98	26	1.8
Pioneer 345A	108	93	21.20	14	38	104	37	1.8
Mean of Test	104	92	22.88	9	40	104	27	1.7
Wood's V-51A	102	88	24.55	34	46	105	29	1.6
Asgrow 302	102	90	22.82	18	43	104	14	1.7
Hofmeyer's H-505	98	90	21.26	8	37	103	30	2.0
DeKalb XL-65	96	91	21.92	10	36	106	36	1.8
Hofmeyer's H-55	96	92	22.31	6	41	98	30	1.6
Wood's V-26-Y	93	89	22.11	12	40	102	28	1.8
V.P.I. 648	92	91	23.58	11	41	100	46	1.7
McNair X-200	91	88	22.52	8	40	97	30	1.8
DeKalb 824	91	92	22.74	11	41	100	28	2.0
Todd 706	82	88	21.57	8	37	98	26	2.0
			White Entries					
Pioneer 509	106	92	23.87	19	44	106	28	1.4
McNair 225	105	92	23.44	11	42	102	19	1.3
Wood's V-125W	102	90	23.54	22	46	102	20	1.5
			Experimental Hybrids Yellow Entries					
AA 1240	106	92	21.08	3	40	106	28	2.0
AA 842	106	93	21.82	8	42	105	26	1.8

Table 15. Comparison of hybrids for certain characteristics

Northern Mountains - Area I

Ashe County - 1965

Hybrid Designation	Yield Bus/A	Stand %	Moisture %	Lodging %	Ear Height Inches	Ears/100 Stalks	Ear Tips Exposed %	Quality
			Commercial Hybrids Yellow Entries					
Pioneer 310	137	98	31.12	6	56	178	13	2.2
Best X-3	133	100	28.63	8	68	153	18	2.7
Pioneer 345A	129	99	25.28	7	52	141	18	3.0
Pioneer 3166	129	99	29.48	3	58	123	37	3.3
McNair X202	128	100	29.40	1	59	122	6	2.3
DeKalb 805	127	100	27.60	1	53	110	6	1.8
Coker 12	124	100	28.02	4	59	163	25	2.8
Ken-Bred E 20YA	123	98	25.78	14	53	127	41	2.5
Pioneer 3369	122	99	23.82	1	56	107	27	1.3
DeKalb 640	120	99	24.60	2	59	152	11	2.5
Asgrow 110	120	99	25.09	6	56	124	35	3.0
McCurdy 7X11	120	98	26.15	2	57	107	20	1.3
Mean of Test	120	99	26.66	4	56	128	25	2.4
DeKalb 624	118	98	24.44	5	53	131	23	1.8
McCurdy 74 X 11	118	99	26.32	0	60	112	15	1.7
McNair X200	115	99	26.44	1	59	109	24	2.0
V.P.I. 648	115	99	27.65	3	58	117	47	2.3
Wood's V-26Y	113	98	25.84	7	52	113	25	2.5
Ken-Bred SX 20Y	113	95	25.10	5	52	106	21	2.7
DeKalb 441	112	100	27.21	11	51	131	29	2.5
Pioneer 3304	111	100	31.10	1	56	117	10	2.0
McNair S210	110	97	23.87	3	53	108	15	2.3
DeKalb XL-45	107	98	23.52	0	43	116	51	3.3
DeKalb 415A	103	99	24.89	10	48	123	26	3.0
McNair 198	99	96	25.72	1	56	116	29	3.3
			White Entries					
McNair 225	108	99	28.87	3	60	115	21	1.5
			Experimental Hybrids Yellow Entries					
AA 1267	152	100	27.04	11	60	160	38	2.8
AA 806	135	99	29.15	1	67	144	27	3.0
DeKalb EX 4040	129	99	24.37	4	57	167	13	2.2
AA 1673	119	99	28.02	5	57	139	40	2.3
McNair 6439	111	100	25.30	2	56	117	29	3.3
L.S.D. (.05)	13	3	1.97	5	4	15	12	.9
(.01)	17	4	2.60	7	6	20	16	1.2
C.V. (%)	9	2	6	111	7	10	44	32

Table 16. Comparison of hybrids for certain characteristics

Southern Mountains - Area II

Haywood County - 1965

Hybrid Designation	Yield Bus/A	Stand %	Moisture %	Lodging %	Ear Height Inches	Ears/100 Stalks	Ear Tips Exposed %	Quality
			Commercial Hybrids Yellow Entries					
Pioneer 3306	92	90	19.77	4	42	105	8	2.3
DeKalb 805	90	96	19.71	4	39	90	10	3.0
Pioneer 3166	85	94	21.40	0	40	92	23	4.0
McNair X202	82	99	20.37	9	46	86	13	2.7
Pioneer 345A	81	99	18.16	6	40	93	31	3.7
Pioneer 310	79	92	21.83	0	44	90	10	2.7
DeKalb XL-385	74	78	19.61	0	46	100	17	2.3
Pioneer 309B	72	96	25.80	0	43	94	8	2.7
CHR 9-P-3	72	82	24.43	6	49	99	6	3.7
Asgrow 110	72	74	18.80	3	39	102	26	3.3
Wagwood 400	71	70	18.28	0	42	100	44	2.7
McNair 340-V	71	100	28.05	3	50	94	6	2.3
DeKalb XL-65	70	97	22.43	3	40	97	21	3.0
Hollyview 160	70	86	19.72	1	45	90	33	3.3
McCurdy SL 97 X 7	69	93	20.93	12	45	82	9	3.0
Ken-Bred E 20YA	69	87	20.34	9	36	94	20	2.7
Mean of Test	68	87	21.73	3	43	91	19	2.9
McNair X200	66	78	20.10	1	44	80	26	4.0
DeKalb 824	65	87	19.72	2	43	78	15	3.0
Coker 12	65	78	23.90	7	41	101	26	3.0
Pioneer 309A	64	97	25.60	6	47	81	6	2.7
McCurdy M97	64	83	22.98	6	43	87	4	1.7
Best X-3	63	90	23.03	0	47	86	10	2.3
McCurdy 44 X 7	63	80	21.17	5	46	82	33	3.7
B&B X400	62	73	17.64	3	31	93	33	4.3
McCurdy 4X7	62	76	18.79	0	39	101	14	3.3
Ken-Bred SX 20Y	62	73	19.61	5	34	85	43	3.7
McNair S210	61	90	18.36	5	40	83	12	3.0
McCurdy 972 X 7	61	78	20.93	13	45	87	7	2.3
McNair 304A	61	84	23.95	0	45	103	4	2.3
U.S. 282	60	98	24.98	0	47	89	9	2.3
Coker 52	56	99	28.22	2	44	91	1	2.3
McNair 198	53	86	17.11	4	34	84	8	3.0
V.P.I. 648	53	71	21.10	3	41	83	40	2.7
			White Entries					
Hollyview 711W	70	86	21.43	1	50	97	5	3.0
DeKalb 999	64	86	21.40	2	45	92	9	1.7
McNair 225	47	83	23.18	10	42	77	10	2.0
			Experimental Hybrids Yellow Entries					
AA 622	83	99	20.60	0	43	91	51	4.0
AA 842	78	90	19.18	3	46	91	40	3.0
NC 3208	77	98	23.94	9	49	92	34	2.3
CHR 9-P-3-B	72	90	24.27	0	45	89	3	3.7
NC 3207	71	87	25.78	2	50	91	19	2.7
AA 1239	71	81	21.30	0	46	99	33	3.0
AA 1240	69	94	19.73	0	42	85	22	3.3
NC 3210	69	80	24.37	0	44	97	19	3.3
CHR 9-P-3-A	65	88	23.72	9	47	95	10	3.0
NC 4022	58	91	24.59	2	42	87	18	3.0
NC 4021	57	94	24.10	2	39	88	36	3.0
McNair 6439	54	79	18.35	0	42	80	27	2.3
NC 4024	49	86	22.10	0	42	87	29	2.7
L.S.D. (.05)	19	15	2.90	8	6	15	18	1.2
(.01)	25	20	3.85	10	8	19	24	1.6
C.V. (%)	17	11	8	139	9	10	58	25

Table 17. Comparison of hybrids for certain characteristics

Piedmont - Area III

Wake, Union, Alamance and Catawba Counties - 1965

Hybrid Designation	Yield Bus/A	Stand %	Moisture %	Lodging %	Ear Height Inches	Ears/100 Stalks	Ear Tips Exposed %	Quality
Commercial Hybrids								
Yellow Entries								
Best X-7	100	90	21.74	4	45	142	7	1.9
Dixie 82	97	85	20.73	10	48	156	2	1.7
Langley 1040	97	90	19.16	3	40	148	5	1.6
Pioneer 3048	94	86	20.71	3	43	141	3	1.7
Coker 52	94	91	19.81	2	40	151	3	1.3
Pioneer 3059	93	91	19.58	3	40	151	5	1.7
P. A. G. 751	93	90	20.66	4	47	170	2	1.7
NC 270	93	84	21.95	5	45	136	3	1.6
Wagwood 200	93	89	19.84	3	40	160	2	1.9
Pioneer 309B	92	89	18.78	5	38	144	6	1.7
Dekalb 1055	92	93	20.53	6	44	153	5	1.8
B & B X399	91	90	18.51	10	47	140	3	1.6
SC 236	91	88	20.18	2	43	151	2	1.3
Taylor 196	90	85	19.95	3	42	159	4	1.8
B & B X395	89	85	21.12	1	42	131	8	2.0
Wagwood 200A	86	89	19.46	4	42	143	3	1.4
Pioneer 310	85	90	18.33	4	36	123	11	2.2
DeKalb 1006	85	93	18.25	3	44	114	7	1.6
Mean of Test	84	88	18.99	4	40	130	10	1.9
NC 27	83	83	19.38	10	47	153	4	1.6
CHR 9-P-3	81	87	18.60	3	45	115	8	2.5
McNair 304A	80	83	19.22	4	37	129	2	1.5
McCurdy M97	78	92	17.12	7	39	114	6	1.8
Langley 1041	78	80	20.72	3	40	126	5	1.9
Watson 430	77	86	19.10	4	38	111	13	1.9
Watson 401A	76	85	18.58	2	34	111	10	1.9
DeKalb 805	75	95	16.02	2	34	102	16	2.4
DeKalb XL-385	74	92	17.29	4	40	106	5	2.0
Asgrow 302	74	92	16.98	14	38	111	7	2.2
Pioneer 3306	73	90	17.66	7	34	112	22	2.3
Pioneer 3369	72	93	16.44	2	32	105	22	2.1
McNair X200	71	91	16.76	4	36	104	18	2.4
V.P.I. 648	71	86	18.14	3	36	106	28	2.4
DeKalb 824	69	88	17.52	5	37	110	18	2.1
McNair S210	59	87	16.39	4	30	99	12	2.4
White Entries								
McNair 425	89	84	20.35	6	43	157	5	1.4
Coker 911	89	89	19.77	8	44	160	3	1.3
DeKalb XL-390	87	93	18.76	5	38	116	10	1.6
Dixie 29	86	86	19.24	11	42	151	4	1.3
McNair 225	83	90	17.53	4	38	108	12	1.8
Taylor 173	77	79	21.02	6	41	152	8	1.5
Experimental Hybrids								
Yellow Entries								
NC 3392	101	93	19.50	3	39	144	2	1.8
NC 4010	89	94	19.93	2	38	128	6	1.6
NC 3375	87	93	20.46	1	37	106	2	1.6
NC 4024	84	93	18.27	3	39	116	27	1.9
NC 3207	83	87	18.23	4	39	117	26	2.6
NC 4001	79	87	18.90	0	36	119	5	1.6
NC 3210	78	85	17.54	4	39	116	16	2.6
NC 4022	77	89	17.77	3	34	123	22	2.0
McNair 64-129	71	83	18.21	7	40	120	41	3.0
L.S.D. (.05)	10	6	1.09	5	2	14	10	.5
(.01)	13	8	1.45	7	3	19	14	.7
C.V. (%)	16	9	8	152	8	14	142	36

Table 18. Comparison of hybrids for certain characteristics

Southern Coastal Plain - Area IV

Craven, Duplin and Scotland Counties - 1965

Hybrid Designation	Yield Bus/A	Stand %	Moisture %	Lodging %	Ear Height Inches	Ears/100 Stalks	Ear Tips Exposed %	Quality
Commercial Hybrids Yellow Entries								
Wagwood 200	105	95	20.53	10	43	144	8	2.1
McCurdy M306	102	96	20.78	1	52	165	2	1.8
P-A-G 751	102	94	20.38	2	49	168	5	2.1
DeKalb 1055	102	97	19.54	1	44	147	9	1.8
Britt 44	102	95	21.62	3	45	159	6	2.2
McNair 440-V	102	97	20.55	1	41	149	6	2.1
Pioneer 3048	100	95	20.05	1	44	130	8	2.0
Greenwood 471	98	95	20.48	2	49	148	2	1.6
Taylor 196	97	97	19.74	1	44	147	6	2.1
Coker 67	96	98	19.99	1	49	150	2	1.7
CHR 7-C-11-C	96	98	21.04	1	51	146	2	1.4
CHR 7-C-11-A	96	96	21.32	0	52	153	2	1.6
Best X-7	95	96	21.83	3	46	128	16	2.1
Dixie 82	94	98	20.33	4	50	132	4	2.1
Coker 74	93	98	21.82	0	43	146	9	1.9
Britt 55	93	94	21.59	1	42	137	3	2.3
Pioneer 309B	92	97	19.25	2	39	134	8	2.2
Mean of Test	92	96	20.38	2	44	137	7	2.0
Coker 71	91	95	20.16	1	48	151	5	1.7
N. C. 270	91	97	22.97	1	49	130	3	2.2
N. C. 27	90	95	19.11	3	46	136	6	1.9
Dixie 18	89	94	21.19	1	55	143	3	1.7
Coker 52	89	97	19.07	1	39	141	3	1.6
S. C. 236	89	97	20.14	1	46	141	1	1.5
Greenwood 61	88	95	20.04	1	45	143	3	1.8
Pioneer 3009	88	96	22.16	3	42	115	4	2.2
Speight D-14	87	96	20.49	2	42	128	5	2.1
Greenwood 437	85	96	22.79	1	44	139	2	1.4
DeKalb 1213	85	97	19.71	1	48	130	8	2.4
Asgrow 600	81	95	20.84	3	53	132	1	1.8
McNair 304A	80	89	19.43	4	38	128	9	2.1
DeKalb 1006	79	98	17.95	5	45	117	10	2.0
Speight D-19	75	96	18.50	0	38	128	14	2.5
White Entries								
McNair 425	97	98	19.62	1	46	144	6	1.8
Coker 911	96	96	19.28	1	49	146	5	1.7
Dixie 29	95	95	19.15	4	44	138	7	2.0
Pioneer 511A	95	97	18.44	3	42	144	5	1.6
Coker 811A	94	96	20.17	0	45	157	2	1.6
Taylor 173	92	91	18.87	1	44	160	3	2.0
Experimental Hybrids Yellow Entries								
Edmund 1	109	98	20.38	1	39	145	3	2.3
Excel 1012	100	96	23.48	6	45	146	8	2.1
Greenwood 481	97	96	18.64	0	40	142	3	1.7
NC 1010	95	98	20.32	1	44	134	6	2.9
Edmund 2	94	95	22.62	3	45	129	6	2.6
NC 5027	92	98	20.47	1	38	123	7	2.1
NC 3222	91	96	21.74	2	44	139	4	2.4
NC 5032	91	96	22.67	0	42	122	14	2.0
Coker 3059	89	96	19.24	0	40	136	3	1.6
NC 3218-15	88	94	23.06	3	47	125	7	2.3
Edmund 3	87	95	24.12	1	42	134	11	2.4
NC 4010	87	97	20.39	1	36	126	7	2.2
NC 1075-09	85	93	19.00	1	44	128	4	1.9
NC 4014	84	99	19.77	1	37	120	11	2.0
Best X-4	83	96	18.36	3	42	113	27	3.3
NC 4015	82	99	19.77	1	37	114	11	1.9
NC 4024	79	98	18.10	1	39	106	30	2.5
NC 6088	77	96	18.32	1	34	110	2	1.9
L.S.D. (.05)	10	4	.92	4	3	14	5	.5
(.01)	14	6	1.23	5	4	19	7	.7
C.V. (%)	14	6	6	262	8	13	102	33

Table 19. Comparison of hybrids for certain characteristics

Northern Coastal Plain - Area V

Nash, Pitt and Northampton Counties - Full Season Test - 1965

Hybrid Designation	Yield Bus/A	Stand %	Moisture %	Lodging %	Ear Height Inches	Ears/100 Stalks	Ear Tips Exposed %	Quality
			Commerical Hybrids Yellow Entries					
P. A. G. 751	108	97	23.47	3	49	150	5	2.0
McCurdy M303	106	97	24.04	3	52	153	2	1.9
Pioneer 3048	104	96	22.88	1	48	122	8	1.9
McCurdy M306	103	96	23.62	3	54	154	1	1.7
Dixie 82	103	95	23.93	2	54	136	4	2.3
DeKalb 1055	101	94	22.99	1	46	139	10	1.8
Pioneer 3059	100	97	22.10	2	43	133	13	1.8
Pioneer 309 B	100	96	21.14	3	42	126	13	1.5
Best X-7	98	94	24.67	3	49	123	21	2.0
Pioneer 309 A	97	94	20.20	2	45	114	16	1.9
Mean of Test	97	95	22.82	2	46	129	9	1.8
CHR 7-C-11-C	95	96	25.05	1	54	138	5	1.6
Coker 52	95	95	22.50	1	42	139	6	1.3
CHR 7-C-11-A	94	96	25.36	2	53	133	4	1.3
SC 236	94	94	24.43	0	49	138	2	1.8
McNair 340-V	93	93	22.68	1	44	122	31	1.8
Speight D-14	93	94	23.59	0	42	123	7	1.6
NC 270	92	97	25.16	2	48	117	5	1.8
DeKalb 1006	91	94	20.82	2	48	114	13	1.8
Asgrow 502	88	92	24.40	2	53	124	5	1.9
McNair 304A	88	92	21.24	4	43	120	8	1.9
			White Entries					
Coker 911	105	94	22.80	2	48	145	12	1.7
Pioneer 511	102	98	20.29	3	44	141	9	1.6
Dixie 29	96	96	21.43	6	47	140	6	1.8
McNair 225	86	96	18.77	5	41	108	22	1.8
			Experimental Hybrids Yellow Entries					
NC 3392	113	99	21.95	0	43	139	6	2.0
NC 3222	106	96	23.94	1	46	136	3	2.4
NC 5004	98	97	25.27	0	47	119	7	2.0
NC 4010	98	95	22.86	2	37	118	15	2.1
NC 3375	92	97	22.32	0	39	109	5	1.9
NC 4001	82	97	20.76	2	38	107	15	1.8
L.S.D. (.05)	11	6	1.60	5	3	13	8	.5
(.01)	15	8	2.14	6	4	17	10	.6
C. V. (%)	14	8	8	286	8	12	98	32

Table 20. Comparison of hybrids for certain characteristics

Northern Coastal Plain - Area V - Short Season

Chowan, Perquimans and Washington Counties - 1965

Hybrid Designation	Yield Bus/A	Stand %	Moisture %	Lodging %	Ear Height Inches	Ears/100 Stalks	Ear Tips Exposed %	Quality
Commercial Hybrids Yellow Entries								
Pioneer 3306	129	95	21.50	2	47	113	38	1.3
P-A-G SX-63	127	91	21.81	7	45	111	48	1.5
Speight D-20	120	91	24.78	10	45	134	27	1.4
McCurdy M97	120	90	24.11	7	49	116	23	1.3
Pioneer 310	119	90	23.18	4	44	114	25	1.8
McNair X202	119	92	23.04	3	46	108	26	1.5
P-A-G SX-29	118	89	21.82	4	43	111	40	2.0
DeKalb XL-385	118	94	23.52	1	47	107	19	2.0
Best X-3	117	96	23.43	9	51	103	26	1.8
Watson 401A	116	90	25.43	3	45	106	28	1.6
P-A-G SX-59	113	93	24.71	4	47	101	31	1.8
Asgrow 302	112	89	22.77	14	48	110	20	1.8
Pioneer 3369	112	95	20.59	1	42	103	43	1.5
Wood's V-51A	111	86	24.03	27	49	118	41	1.7
Mean of Test	111	92	22.28	8	44	110	35	1.7
Watson 430	109	91	25.64	2	44	106	28	1.8
McNair X200	109	87	22.04	6	42	104	30	1.8
Coker 12	108	94	22.75	12	44	114	38	1.8
Hofmeyer's H-55	108	91	21.94	6	44	101	36	1.5
Pioneer 345A	107	93	20.08	18	42	109	43	1.9
V.P.I. 648	107	92	23.34	10	45	107	52	1.7
Wagwood 400	106	80	20.94	4	48	114	44	1.8
Todd 635	106	91	21.46	10	43	109	21	1.9
DeKalb XL-65	104	89	20.97	5	39	113	41	1.7
Hofmeyer's H-505	102	88	20.37	8	41	107	34	2.2
Dekalb XL-346	102	94	20.90	4	34	109	45	2.3
McNair S210	101	91	21.35	5	42	104	35	1.9
DeKalb 824	98	92	22.06	16	45	105	32	1.9
McNair 198	97	87	20.75	3	40	110	35	1.9
DeKalb XL-425	96	92	17.04	10	36	119	22	1.8
Wood's V-26Y	96	86	21.97	16	42	108	38	2.1
Hofmeyer's H-404	93	88	19.82	9	38	113	34	2.0
DeKalb XL-45	93	93	19.14	5	31	108	40	2.3
Todd 706	87	88	20.89	8	40	101	32	2.0
White Entries								
Wood's V-125W	121	92	23.00	21	51	111	27	1.3
Pioneer 509	116	92	23.43	13	47	115	42	1.4
McNair 225	114	91	22.72	7	46	106	30	1.3
Experimental Hybrids Yellow Entries								
NC 3208	126	95	23.38	8	50	112	51	1.6
NC 4025	125	100	23.12	5	46	106	44	1.3
NC 3211	121	93	24.29	6	48	107	29	1.8
Best X-4	119	93	25.45	7	49	109	42	1.8
AA 1673	118	94	22.58	12	44	104	37	2.0
AA 806	117	94	21.23	5	49	112	29	1.8
NC 4022	116	90	23.95	7	45	120	48	1.5
NC 3210	116	93	22.59	11	47	109	30	1.7
AA 1240	114	91	20.01	3	44	111	35	2.1
AA 1239	114	90	23.42	4	45	115	34	1.8
Van's X03	113	94	24.27	3	45	108	28	1.3
NC 4024	113	95	24.23	7	45	110	45	1.3
DeKalb EX-4040	113	96	20.71	3	43	115	30	1.3
NC 4021	112	94	24.17	8	46	107	38	1.3
AA 1267	112	90	21.92	12	45	112	38	1.8
AA 622	111	95	22.68	7	44	106	30	2.0
AA 460	111	95	20.84	4	44	108	29	1.8
AA 842	108	92	21.18	5	45	108	32	1.8
McNair 6439	107	92	20.08	3	43	106	40	1.6
NC 4023	105	94	20.39	8	40	109	33	1.7
L.S.D. (.05)	11	5	1.22	5	3	7	10	.5
(.01)	15	7	1.62	7	4	10	14	.6
C.V. (%)	12	7	7	88	8	8	37	35

Part II

GRAIN SORGHUM

Most of the grain sorghum in North Carolina is grown in the Piedmont where it is used primarily for feed purposes. In the Piedmont area it is generally produced as a single crop for the season, while in the Coastal Plain area it is frequently grown as a second crop following small grains. In 1965 all tests were conducted in the Piedmont area.

The data presented in this report provide information on the performance of commercial varieties, hybrids, and experimental lines grown in various geographical areas of the state and under different cropping systems. Information of this nature serves as a guide to sorghum breeders in their development of varieties and to growers in choosing a variety to plant.

This report presents the results of the North Carolina Official Sorghum Variety Trials for the 1965 season and summarizes the results of tests conducted during the past two and three years.

EXPERIMENTAL PROCEDURE

In this program are included experimental lines, hybrids, and varieties developed by public and private agencies. Any individual or firm may make application for having entries included. Quantitative data from experiments in which the proposed entry is compared with recognized hybrids and varieties must show merit for the entry and must accompany the application. A fee is charged on an entry basis. Personnel of the testing program may include entries about which further information is desired.

Agencies Sponsoring Entries		Designation
Advance Seed Company	Phoenix, Arizona	Advance
Arkansas Agricultural Experiment Station	Fayetteville, Arkansas	AKS
Asgrow Seed Company	Atlanta, Georgia	Ranger-A, Redhead
DeKalb Agricultural Association, Inc.	Lubbock, Texas	DeKalb
Excel Seed Company	Plainview, Texas	Excel
Frontier Hybrids, Inc.	Scott City, Kansas	Frontier
Georgia Agricultural Experiment Station	Experiment, Georgia	Georgia
Northrup, King and Company	Lubbock, Texas	NK
N. C. Agricultural Experiment Station	Raleigh, N. C.	RS
Paymaster Seed Farms	Plainview, Texas	Apache, Kiowa
Pfister Associated Growers, Inc.	Aurora, Illinois	P. A. G.
Pioneer Corn Company, Inc.	Tipton, Indiana	Pioneer
Taylor-Evans Seed Company	Tulia, Texas	T-E

Test Locations

Three locations were used in 1965 in the Piedmont as shown in Figure 1. All tests were located on private farms and were considered to be good grain sorghum tests for the 1965 season.

Seasonal Conditions

The 1965 growing season was generally favorable for the production of grain sorghum. Good stands were obtained at all test locations and adequate moisture conditions existed throughout the growing season.

Ample rainfall during the season caused very little variation in the flowering data and head exsertion. Varietal differences on these two characteristics are shown in the tables. All tests were uniform except the fourth replication in Cabarrus County which was lost and not included in the publication. Weather was favorable for harvesting and very little lodging occurred.

Cultural Practices

Cultural practices, such as soil preparation, date of planting, fertilization and topdressing were in accord with good management and were the same for all entries at a location, Table 21. Planting and harvesting were directly supervised by personnel of the North Carolina Agricultural Experiment Station.

Experiments were harvested with a modified combine. The grain was caught as it came from the elevator of the combine and was weighed at the end of each plot on scales mounted on the combine.

Data

A randomized block design was used with four replications at each location. Plot size was two rows 27 feet long. The row width was 40 inches in each test.

Yield. The plots were harvested individually and the average grain yield was calculated in pounds per acre.

Moisture. A moisture percentage was taken and yields were adjusted to 14 percent moisture.

Plant Height. The average height of plants in each plot was taken and an average for each entry was calculated.

Head Exsertion. The distance in inches from the top leaf to the base of the head was measured and referred to as head exsertion. This distance gives an indication of the ease with which grain sorghum may be harvested without leaves and plant material hindering the operation.

Days to Flower. The average number of days from planting to flowering was determined.

Table 21. Cultural practices on grain sorghum performance trials. Piedmont - 1965.

Area and Co-operator	Fertilizer lbs/A	Herbicide [1] Pre emerge	Top Dressing lbs/A	Row Spacing Inches	Date of Planting	Date of Harvest
Cabarrus County Ralph O. Simmons	300 10-20-20	Propazine	130 liq. nit.	40"	May 4	Aug. 27
Chatham County Russell & Eugene Johnston	300 10-20-20	Propazine	130 liq. nit.	40"	May 5	Aug. 27
Montgomery County E. T. Gaddy	300 10-20-20	Propazine	130 liq. nit.	40"	May 6	Aug. 30

[1] All test were top-dressed with liquid nitrogen and 1 pint/A of 2, 4-D at layby for late weed control.

RESULTS

The data presented in Tables 22, 23 and 24 are summaries for various years and locations and indicate how varieties have been performing in different environments. A three-year average performance for the Piedmont is shown in Table 22. Entries ranged in yield from 5026 for Ga. 615 to 3789 pounds per acre for Frontier 410E.

The performance of entries during the last two years in the Piedmont is shown in Table 23. Yields ranged from a high of 5534 pounds per acre for DeKalb F-61 to 3268 for Martin.

A summary of the 1965 results for the Piedmont is shown in Table 24. Yields ranged from 5630 pounds per acre for DeKalb F-61 to 2402 for Martin. Over half of the entries yielded above the mean of the test which is indicative of their good performance. All data should be studied in evaluating varieties and hybrids. The data from these tests are probably representative of the performance of these hybrids since the tests were generally good and the season was favorable for the production of grain sorghum. However, data for more than one year should be utilized in determining the performance of hybrids

Table 22. Performance of grain sorghum - Piedmont. Three year average 1963-1964-1965. Average of 8 locations

	Yield lbs/A	Moisture %	Days to flower	Plant height inches	Head exsertion inches
Ga. 615	5026	17.88	69	52	6
AKS 614	4854	17.50	68	46	5
Pioneer 820	4637	18.21	74	47	5
DeKalb F-63	4533	17.99	73	51	6
Mean of Test	4379	17.58	70	48	6
T-E 66	4335	16.61	70	43	5
RS 610	4325	17.47	68	50	8
Apache	4280	19.01	75	49	6
Pioneer 846	4227	17.90	70	50	8
Frontier 400C	4164	17.55	67	52	8
Kiowa	4148	17.80	69	51	7
NK 222	4090	16.56	67	47	8
DeKalb C-44b	3854	15.98	68	47	6
Frontier 410E	3789	17.07	72	41	5

Table 23. Performance of grain sorghum - Piedmont. Two year average 1964-1965. Average of 5 locations

	Yield lbs/A	Moisture %	Days to flower	Plant height inches	Head exsertion inches
DeKalb F-61	5534	19.44	67	52	8
NK 275	5308	18.75	68	48	6
Redhead	5204	19.26	70	55	7
DeKalb E-57	5129	19.24	68	54	7
Ranger A	5046	18.96	68	54	9
AKS 614	5002	18.93	65	48	6
Ga. 615	5001	19.50	66	54	7
P-A-G 515	4876	19.42	68	52	8
Frontier 413	4846	20.01	71	53	8
Advance 14	4814	16.87	63	50	9
DeKalb F-63	4804	19.59	70	55	8
Pioneer 820	4788	19.70	71	50	6
NK 255	4782	18.30	66	44	6
T-E Grainmaster	4690	19.60	69	53	6
Mean of Test	4516	18.90	67	51	7
RS 610	4498	18.92	64	52	8
T-E 66	4428	18.02	68	46	6
Frontier 401	4342	18.99	64	49	8
Pioneer 846	4330	19.30	67	53	8
Kiowa	4292	19.42	65	53	8
NK 212	4252	18.60	64	52	7
Apache	4233	20.14	72	52	6
Frontier 400C	4176	18.99	64	55	8
NK 222	4054	17.67	63	52	10
Frontier 410E	4050	18.40	69	44	6
DeKalb C-44b	3830	17.03	64	50	7
NK 133	3368	17.77	59	47	7
Martin	3268	18.77	69	50	8

Table 24. Performance of grain sorghum for certain characteristics - Piedmont. Chatham, Cabarrus and Montgomery Counties - 1965.

	Yield lbs/A	Moisture %	Days to flower	Plant height inches	Head exsertion inches
Dekalb F-61	5630	20.40	68	56	10
Dekalb E-57	4807	19.81	67	53	9
NK 275	4750	19.29	70	55	7
P-A-G 515	4720	19.95	69	58	9
Frontier 413	4627	20.30	73	58	7
*NK x 3050	4490	19.06	64	55	9
Ranger A	4484	19.26	70	58	9
NK 255	4476	19.05	66	47	8
Bird Go	4464	20.68	69	61	10
Rehead	4430	20.00	74	60	8
AKS 614	4405	18.90	64	53	8
Pioneer 820	4403	20.04	73	55	8
Jumbo	4361	20.26	73	54	6
Ga. 615	4355	20.22	68	60	8
Dekalb F-65	4193	19.28	72	54	9
Apache	4142	20.76	73	59	9
Dekalb F-63	4124	19.72	71	59	9
Mean of Test	4103	19.45	69	54	8
Frontier 410E	4070	18.51	70	44	6
Frontier 401	4067	19.57	65	46	7
Advance 14	4064	17.68	65	53	10
RS 610	4058	19.32	66	57	10
T-E Grainmaster	4055	20.60	72	59	8
T-E 66	4042	18.20	68	45	7
Rico	3993	17.56	68	50	9
Kiowa	3811	19.41	66	57	10
NK 212	3811	18.89	65	55	9
NK 222	3771	18.07	66	50	9
*P-A-G Exp. 3628	3439	21.64	74	57	9
Frontier 400C	3427	19.70	65	56	9
Pioneer 846	3408	19.03	69	52	8
Dekalb C-44b	3033	17.24	65	51	8
NK 133	2829	19.19	59	52	9
Martin	2402	19.40	71	51	10
L. S. D. (.05)	745	1.52	3	4	2
(.01)	989	2.02	4	5	2
C. V. (%)	15	6	1	6	57

* Experimental

Part III

CORN AND SORGHUM SILAGE

Silage is an important part of the beef and dairy cattle industry in North Carolina. The trend is toward greater utilization of silage in feed programs. It is desirable to know the performance and feed value of different corn and sorghum hybrids so as to ascertain their general use in the various areas of the state.

The data presented in this report provide information on the performance of commercial hybrids and experimentals grown in various Coastal, Piedmont and Mountain areas of the state. Information of this nature serves as a guide to breeders in their development of hybrids for silage and to growers in choosing a hybrid to plant for silage production.

This report presents the results of the North Carolina Official Corn and Sorghum Silage trials for the 1965 season.

EXPERIMENTAL PROCEDURE

In this program are included corn and sorghum hybrids and experimentals developed by public and private agencies. Any individual or firm may make application for having entries included. A fee is charged on an entry basis. Personnel of the testing program may include entries about which further information is desired.

Agencies Sponsoring Entries		Designation
Advance Seed & Grain Company	Phoenix, Arizona	Advance (Sorghum)
Asgrow Seed Company	San Antonio, Texas	Asgrow (Corn) Grazer-A (Sorghum) Beefbuilder-T (Sorghum)
Coker Pedigreed Seed Company	Hartsville, S. C.	Coker (Corn)
Cotton Hybrid Research, Inc.	Athens, Georgia	Southern Cross (Sorghum)

DeKalb Agricultural Assoc., Inc.	DeKalb, Illinois	DeKalb (Corn & Sorghum)
Excel Seed Company	Plainview, Texas	Silo Fill (Sorghum)
Frontier Hybrids, Inc.	Scott City, Kansas	Frontier (Sorghum)
Hollyview Farm	Mt. Airy, N. C.	Hollyview (Corn)
McNair Seed Company	Laurinburg, N. C.	McNair (Corn)
N. C. Agricultural Experiment Station	Raleigh, N. C.	N.C., Sart (Corn & Sorghum) Texas Seeded Ribbon
Northrup, King and Company	Lubbock, Texas	NK (Sorghum)
Paymaster Seed Farms	Plainview, Texas	Aztec (Sorghum)
Pfister Associated Growers, Inc.	Aurora, Illinois	P.A.G. (Sorghum)
Pioneer Corn Company, Inc.	Tipton, Indiana	Pioneer (Corn & Sorghum)
R. R. Best & Sons	Faison, N. C.	Best (Corn)
S. C. Agricultural Experiment Station	Clemson, S. C.	S. C. (Corn)
Taylor-Evans Seed Company	Tulia, Texas	T-E (Sorghum)
T. W. Wood and Sons	Richmond, Virginia	Wood's Pamunkey Ensilage (Corn) Green Gro (Sorghum)
Tomahund Plantation	Williamsburg, Virginia	Hofmeyers (Corn)
Wagwood Farms, Inc.	Gibsonville, N. C.	Wagwood (Corn)
Watson Seed Farms, Inc.	Rocky Mount, N. C.	Watson (Corn)

Test Locations

Six locations were used for corn silage--one in each of the Mountain areas, three in the Piedmont, and one in the Coastal Plain. Three locations were used for sorghum silage in the Piedmont as shown in Figure 1. Two of the sorghum tests, two of the Piedmont tests and the Coastal Plain test of corn silage were on private farms, whereas the two Mountain tests and a Piedmont corn and sorghum silage test were on Research Stations.

Seasonal Conditions

The growing season was generally favorable for the production of corn and sorghum silage at most locations. A good stand was obtained at all locations in both the corn and sorghum silage test.

The Rowan County sorghum silage test had dry conditions after flowering but before maturity and had to be harvested about 10 days early.

Good seasonal conditions prevailed at the Chatham and Stanly sorghum silage tests. Late rain and wind damage just prior to harvest was recorded at the Stanly sorghum silage trial with heavy lodging noted.

Normal season conditions prevailed at all corn silage locations. Ideal moisture conditions existed at all corn silage test locations due primarily to selection of bottom land sites. The two Mountain tests also had good yields. Both of these tests were on bottom land where good moisture conditions existed.

Cultural Practices

Cultural practices, such as seed bed preparation, date of planting, fertilization, cultivation and harvesting were in accord with good farming practices and were the same for all entries in a given test, Table 25. Planting, harvesting and sampling were directly supervised by personnel of the North Carolina Experiment Station. All tests were cut by hand and fed through an ensilage cutter mounted on a 3-point hitch and operated by the power take-off.

Criteria for Evaluating Silage Entries

A randomized block design with four replications was used for each test. The plots consisted of two rows 17 feet long. Spacing within the row was approximately 6 inches for corn and 2 inches for sorghum. Row widths are shown in Table 25.

Yield of Silage. The silage was cut, chopped and weighed by plots in the field and the data converted to an acre basis. Yield of green weight was adjusted to

Table 25. Cultural practices on corn and sorghum silage performance trials.

Area and Co-operator	Fertilizer lbs/A	Herbicide [1] Pre emerge	Top Dressing lbs/A	Row Spacing Inches	Date of Planting	Date of Harvest
		Corn Silage				
Ashe County Dana G. Tugman	500 10-20-20	Simazine	130 ammon. nit.	40"	May 12	Sept. 27
Haywood County J. R. Edwards	Drilled 400 5-10-10	Simazine	130 liq. nit.	40"	May 11	Sept. 7
Alamance County Paul McBane	300 10-20-20	Simazine	130 liq. nit.	40"	May 5	Aug. 20
Rowan County Clyde McSwain	300 10-20-20	Simazine	130 liq. nit.	40"	May 17	Aug. 25
Gaston County Howard Harrelson	300 10-20-20	Simazine	130 liq. nit.	40"	May 6	Aug. 16
Sampson County Maxton Bass	300 10-20-20	Simazine	120 liq. nit.	40"	April 21	Early Var. Aug. 5 Late Var. Aug. 11
		Sorghum Silage				
Chatham County Horace Mann	300 10-20-20	Propazine	130 liq. nit.	40"	May 4	Aug. 19
Stanly County Spurgeon Brooks	300 10-20-20	Propazine	130 liq. nit.	40"	May 14	Aug. 27
Rowan County Clyde McSwain	300 10-20-20	Propazine	130 liq. nit.	40"	May 17	Aug. 18

[1] Top dressed with liquid nitrogen and 14 oz./A of 2, 4-D in both corn and sorghum silage. When needed 1 1/4 lbs/A Lorox or 1 lb/A of Atrazine was used at layby to control grass in the corn test.

65% moisture.

Moisture Per Cent. Six stalks were selected at random for each plot and chopped for the moisture and chemical analysis sample. The sample was dried in a forced air oven to determine moisture. The dried samples were subsampled and ground through a hammer mill and subsampled again and ground in a Wiley mill. The ground sample was analyzed for crude protein and crude fiber.[3/]

Dry Weight Tons/A. The green weight of silage was multiplied by the percent dry matter (corrected).

Total Digestible Nutrients Per Cent. The formula TDN % = 79.40 - (0.69 x CF) was used to calculate the TDN on a dry basis.

Estimated Net Energy Per Cent. The formula ENE % = 75.97 - (0.96 x CF). ENE on a dry basis was used.

Crude Protein % and Crude Fiber %. These were determined from the chemical sample and reported on a dry basis.

Digestible Protein. The formula DP = (0.93 x CP) - 3.32 was used to calculate digestible protein on a dry basis.

Plant Height. Height of plants was measured in inches.

Days to Mid Bloom. When each sorghum hybrid was in mid bloom the data was recorded and the number of days to mid bloom was calculated.

Ear Height. Height of ears in the corn tests was measured in inches.

Stand Count. Plants were counted and a stand count % was calculated for the corn silage.

Lodging %. Number of plants lodged were counted and a % lodged was calculated on the corn silage. An objective % lodged was taken on sorghum silage.

[3/] The chemical analyses were made under the direction of Robert Tullock through the courtesy of the North Carolina Department of Agriculture, Division of Feed Testing.

RESULTS

Corn Silage and Sorghum Silage.

The corn silage data are presented by areas in Tables 26 through 37. The data in Tables 26 through 29 are summaries over a three-year period for the corn silage. These data show the performance of hybrids under several environments and would be considered most useful in evaluating the performance of a hybrid. Some of the hybrids that were highest in tons of dry matter produced per acre were lowest in percent total digestible nutrients and estimated net energy. The data should be considered from the amount of feed value produced per acre.

The sorghum silage, conducted in the Piedmont for 1963, 1964 and 1965, shows yield and other characteristics for a three-year average. A comparison of the feeding value of sorghum silage versus corn silage can be obtained by observing the recorded data.

Table 26. Performance of corn silage - Northern Mountains - Area I. Ashe County - Three-year average - 1963-1964-1965. Average of 3 locations.

Entries	Dry Matter Tons/A	Moisture %	TDN %	ENE %	Crude Protein %	Digestible Protein %	Crude Fiber %	Ear Height Inches	Stalk Height Inches
DeKalb 805	9.1	72.4	62.5	52.5	7.5	3.6	24.5	62	133
Pioneer 310	9.1	76.9	61.7	51.2	8.8	4.9	25.7	63	129
DeKalb 640	9.0	75.1	61.8	51.6	8.4	4.5	25.5	63	126
Coker 911	8.9	78.4	59.1	47.7	9.1	5.1	29.4	75	131
N. C. 27	8.7	79.3	59.6	48.4	8.7	4.8	28.7	73	132
Mean of Test	8.7	76.0	61.2	50.7	8.5	4.5	26.3	65	128
V.P.I. 648	8.6	73.8	61.9	51.6	7.9	4.0	25.3	61	129

Table 27. Performance of corn silage - Southern Mountains - Area II. Haywood County - Three-year average - 1963-1964-1965. Average of 3 locations.

Entries	Dry Matter Tons/A	Moisture %	TDN %	ENE %	Crude Protein %	Digestible Protein %	Crude Fiber %	Ear Height Inches	Stalk Height Inches	Stand Count %
Pamunkey Ensilage	9.0	79.1	59.6	48.4	8.3	4.4	28.7	83	158	91
McNair 425	8.8	77.6	60.4	49.7	8.6	4.7	27.4	71	139	95
Wagwood 200	8.7	77.3	60.9	50.2	8.8	4.8	26.9	62	139	93
DeKalb 1051	8.6	78.0	61.3	50.8	8.9	5.0	26.2	67	135	97
DeKalb 1006	8.5	75.9	62.1	51.9	7.8	4.0	25.0	66	133	96
N. C. 270	8.5	78.0	60.8	50.1	9.0	5.1	26.9	70	144	95
Coker 911	8.3	78.3	60.6	49.8	8.9	5.0	27.3	69	137	92
Mean of Test	8.3	77.6	61.2	50.7	8.6	4.7	26.4	67	137	94
McNair 444	8.1	77.4	61.4	50.9	8.2	4.3	26.1	68	136	93
Pioneer 309A	8.0	76.9	61.6	51.3	8.6	4.7	25.8	64	128	96
Pioneer 310	8.0	78.0	62.1	52.0	8.6	4.7	25.0	62	131	93

Table 28. Performance of corn silage - Piedmont - Area III. Three Year Average - 1963-1964-1965. Average of 7 locations.

Entries	Dry Matter Tons/A	Moisture %	TDN %	ENE %	Crude Protein %	Digestible Protein %	Crude Fiber %	Ear Height Inches	Stalk Height Inches	Stand Count %
N.C. 270	7.0	70.8	62.1	51.9	8.3	4.4	25.1	54	124	93
Pioneer 3048	6.9	70.3	62.4	52.3	8.5	4.6	24.7	52	116	93
Wagwood 200	6.8	68.8	62.7	52.8	8.3	4.4	24.1	49	114	95
Dixie 82	6.7	69.5	61.7	51.4	7.8	4.0	25.6	59	125	92
N.C. 27	6.6	70.4	61.5	51.1	7.9	4.0	25.9	56	121	92
DeKalb 1051	6.6	70.1	63.5	53.8	8.6	4.7	23.1	57	119	95
Mean of Test	6.6	69.5	62.2	52.1	8.2	4.4	24.9	53	117	93
McNair 444	6.5	68.4	62.6	52.6	8.2	4.3	24.3	55	117	93
McNair 425	6.5	71.1	62.4	52.2	8.5	4.6	24.7	54	117	93
Coker 911	6.2	71.3	61.8	51.4	8.7	4.8	25.6	53	115	91

Table 29. Performance of corn silage - Southern Coastal Plain - Area IV. Three Year Average - 1963-1964-1965. Average of 3 locations.

Entries	Dry Matter Tons/A	Moisture %	TDN %	ENE %	Crude Protein %	Digestible Protein %	Crude Fiber %	Ear Height Inches	Stalk Height Inches	Stand Count %
N.C. 270	6.9	67.4	61.6	51.2	7.6	3.7	25.7	51	119	97
Coker 911	6.9	66.3	62.2	52.0	8.1	4.2	24.9	46	109	98
Dixie 18	6.9	67.4	62.2	52.0	7.4	3.6	24.9	58	122	90
Dixie 82	6.8	66.0	62.9	53.0	7.3	3.5	23.9	52	118	97
Wagwood 200	6.8	65.2	63.7	54.1	7.7	3.8	22.8	44	112	99
S.C. 236	6.6	65.7	62.0	51.7	7.2	3.3	25.3	49	115	99
Mean of Test	6.6	67.2	62.2	51.9	7.6	3.7	25.1	52	116	96
DeKalb 1051	6.3	68.1	63.5	53.8	8.0	4.1	23.0	51	112	98

Table 30. Performance of corn silage - Northern Mountains - Area I. Ashe County - Two Year Average-1964-1965. Average of 2 locations.

Entries	Green Wt. Tons/A [1]	Moisture %	Dry Matter Tons/A	TDN %	ENE %	Crude Protein %	Digestible Protein %	Crude Fiber %	Ear Height Inches	Stalk Height Inches
Pioneer 310	26.4	76.2	9.2	61.4	50.8	8.8	5.0	26.1	62	131
DeKalb 805	26.4	71.6	9.2	62.1	51.9	7.5	3.6	25.1	62	137
DeKalb 640	25.9	74.8	9.0	61.3	50.8	8.4	4.6	26.2	67	134
Pioneer 309A	25.5	75.8	8.9	60.6	49.8	8.5	4.6	27.2	66	129
Coker 911	25.0	78.4	8.8	58.7	47.2	8.8	5.4	30.0	80	140
Mean of Test	25.0	75.5	8.8	61.1	50.6	8.4	4.4	26.5	68	134
N.C. 27	24.9	78.8	8.8	59.4	48.2	8.6	4.6	29.0	80	140
V.P.I. 648	24.2	73.9	8.5	61.4	50.8	7.8	4.0	26.1	65	136
DeKalb 824	23.5	73.8	8.2	62.6	52.7	7.9	4.0	24.3	62	131

Table 31. Performance of corn silage - Southern Mountains - Area II. Haywood County - Two Year Average - 1964-1965. Average of 2 locations.

Entries	Green Wt. Tons/A [1]	Moisture %	Dry Matter Tons/A	TDN %	ENE %	Crude Protein %	Digestible Protein %	Crude Fiber %	Ear Height Inches	Stalk Height Inches	Stand Count %
Pamunkey Ensilage	23.8	79.4	8.3	58.8	47.4	8.6	4.6	29.8	82	158	90
N.C. 270	23.6	77.2	8.3	61.0	50.3	8.8	4.9	26.8	71	144	98
McNair 425	23.3	77.2	8.2	60.4	49.8	8.4	4.5	27.4	69	138	94
DeKalb 1006	23.2	75.6	8.1	61.9	51.6	8.0	4.1	25.4	66	134	97
Wagwood 200	23.0	77.4	8.0	60.5	49.7	9.0	5.0	27.4	64	139	94
DeKalb 1051	23.0	77.6	8.0	61.1	50.4	9.0	5.0	26.6	70	134	96
Mean of Test	22.3	77.5	7.8	61.0	50.4	8.6	4.7	26.6	68	137	94
Pioneer 310	22.2	78.1	7.8	62.4	52.4	8.6	4.8	24.6	60	128	92
N.C. 27	22.1	79.0	7.8	60.1	54.1	8.9	5.0	28.0	70	138	92
Coker 911	21.8	78.7	7.6	60.2	49.2	8.8	5.0	27.9	71	136	92
McNair 444	21.4	77.4	7.5	61.0	50.4	8.3	4.4	26.6	68	139	92
Pioneer 309A	20.9	77.0	7.3	61.5	51.0	8.7	4.8	26.0	64	126	97

[1] Corrected to a standard 65% moisture

Table 32 Performance of Corn Silage - Piedmont - Area III.
Two year average - 1964-1965. Average of 5 locations.

Entries	Green Wt. Tons/A [1]	Moisture %	Dry Matter Tons/A	TDN %	ENE %	Crude Protein %	Digestible Protein %	Crude Fiber %	Ear Height Inches	Stalk Height Inches	Stand Count %	Lodging %
N.C. 270	18.6	72.0	6.5	62.2	52.0	8.6	4.7	25.0	52	122	91	6
Pioneer 3048	18.2	72.3	6.4	62.6	52.6	8.8	4.8	24.4	49	114	92	4
Dixie 82	18.1	70.6	6.4	62.0	51.8	8.0	4.2	25.2	56	124	92	8
Wagwood 200	17.6	70.8	6.2	63.4	53.6	8.5	4.6	23.2	46	112	94	10
N.C. 27	17.4	71.8	6.1	62.0	51.7	8.0	4.2	25.2	52	120	90	6
Mean of Test	17.1	70.8	6.0	62.6	52.6	8.4	4.6	24.4	50	115	91	8
DeKalb 1051	17.0	71.8	6.0	64.1	54.6	9.0	5.1	22.2	54	116	95	8
Best X-7	17.0	70.2	6.0	62.8	52.8	8.2	4.4	24.1	51	120	90	9
McNair 444	16.8	70.1	5.9	62.8	53.0	8.4	4.6	24.0	52	114	90	9
McNair 425	16.7	72.8	5.8	62.6	52.6	8.8	4.8	24.2	50	114	92	5
Coker 911	16.1	72.8	5.6	61.9	51.6	8.9	5.0	25.4	50	112	89	4
Watson 401A	15.6	67.1	5.4	64.4	55.0	8.8	4.8	21.8	38	98	89	16

Table 33. Performance of Corn Silage - Southern Coastal Plain - Area IV. Sampson County.
Two year average - 1964-1965. Average of 2 locations.

Entries	Green Wt. Tons/A [1]	Moisture %	Dry Matter Tons/A	TDN %	ENE %	Crude Protein %	Digestible Protein %	Crude Fiber %	Ear Height Inches	Stalk Height Inches	Stand Count %	Lodging %
Coker 911	18.9	68.3	6.7	61.4	51.0	8.2	4.2	26.1	46	107	97	2
N.C. 270	18.9	70.2	6.6	60.5	49.6	7.6	3.8	27.4	52	118	96	6
Dixie 82	18.8	69.2	6.6	62.3	52.2	7.4	3.7	24.8	51	116	96	2
Dixie 18	18.6	69.2	6.5	61.8	51.4	7.2	3.4	25.6	57	120	85	6
Waywood 200	18.5	67.6	6.4	63.1	53.3	7.6	3.8	23.6	44	110	98	2
S.C. 236	17.6	68.4	6.2	61.6	51.2	7.0	3.2	25.8	48	114	98	2
McNair 425	17.6	69.4	6.2	62.6	52.6	7.6	3.7	24.3	47	108	98	4
Mean of Test	17.4	70.0	6.2	61.4	51.0	7.5	3.6	26.1	52	115	94	4
Best X-7	17.0	68.8	6.0	62.2	51.2	7.3	3.5	24.8	48	113	92	4
DeKalb 1051	16.6	71.8	5.8	63.1	53.3	8.0	4.0	23.6	50	110	98	4
McNair 444	16.1	69.4	5.6	63.0	53.2	7.6	3.7	23.7	50	109	96	3
Hofmeyers H-601	15.9	68.4	5.6	64.2	54.7	7.6	3.8	22.2	45	107	96	2

[1] Corrected to a standard 65% moisture

Table 34. Performance of Corn Silage - Northern Mountains - Area I. Ashe County - 1965.

Entries	Green Wt Tons/A 1/	Moisture %	Dry Matter Tons/A	TDN %	ENE %	Crude Protein %	Digestible Protein %	Crude Fiber %	Ear Height Inches	Stalk Height Inches	Stand Count %
*NC 3211	28.3	75.4	9.9	61.1	50.6	9.6	5.6	26.5	71	136	96
Hollyview 160	27.3	75.4	9.6	60.2	49.3	9.4	5.4	27.8	70	132	99
DeKalb 640	27.1	73.1	9.5	59.6	48.5	8.9	5.0	28.6	69	133	96
DeKalb 805	26.2	69.0	9.2	61.3	50.8	7.8	3.9	26.3	60	134	96
N.C. 27	25.6	79.3	9.0	58.5	46.9	9.4	5.4	30.3	80	137	89
Pioneer 310	25.5	75.9	8.9	60.9	50.3	9.9	5.9	26.8	61	126	96
Coker 12	25.4	75.6	8.9	61.5	51.1	9.7	5.7	25.9	62	129	98
Coker 911	25.3	79.4	8.9	57.5	45.5	9.6	5.6	31.7	85	142	93
Mean of Test	25.3	75.3	8.8	60.1	49.2	9.1	5.1	27.9	68	131	95
Pioneer 309A	25.2	76.3	8.8	59.4	48.1	9.4	5.4	29.0	64	123	97
V.P.I. 648	23.6	73.8	8.3	60.1	49.1	8.2	4.3	27.9	62	130	96
DeKalb 824	22.4	74.1	7.8	61.4	51.0	8.0	4.1	26.1	62	127	91
Hollyview 711W	21.0	76.1	7.4	60.0	49.0	8.9	5.0	28.1	65	124	94
L.S.D. (.05)	2.2	2.0	.8	1.3	1.9	.5	.5	2.0	11	11	6
(.01)	3.0	2.7	1.1	1.8	2.5	.7	.7	2.6	15	15	7
C.V. (%)	6.1	1.8	6.1	1.5	2.6	4.1	6.8	4.8	12	6	4

1/ Reported at a standard 65% moisture.

* Experimental

Table 35. Performance of corn silage - Southern Mountains - Area II. Haywood County - 1965

Entries	Green Wt Tons/A [1/]	Moisture %	Dry Matter Tons/A	TDN %	ENE %	Crude Protein %	Digentible Protein %	Crude Fiber %	Ear Height Inches	Stalk Height Inches	Stand Count %
Wagwood 200	21.8	78.0	7.6	59.1	47.8	8.9	5.0	29.4	63	144	94
Dekalb 1051	21.5	78.7	7.5	60.5	49.6	9.2	5.3	27.5	72	134	98
N. C. 270	21.0	79.4	7.4	60.2	49.3	8.7	4.8	27.8	76	150	98
*NC 3207	21.0	77.9	7.3	61.2	50.6	8.6	4.7	26.4	66	140	94
Pamunky Ensilage	20.3	80.9	7.1	57.5	45.5	8.8	4.9	31.8	92	164	88
Coker 911	20.3	80.1	7.1	59.0	47.6	8.9	5.0	29.6	76	142	95
McNair 425	20.2	79.4	7.1	60.1	49.4	8.6	4.7	27.7	70	142	94
Pioneer 310	19.9	79.8	7.0	62.1	52.0	8.9	5.0	25.0	63	130	95
Mean of Test	19.9	79.3	7.0	60.0	49.0	8.7	4.8	28.1	71	141	94
DeKalb 1006	19.8	77.3	6.9	60.4	49.5	7.7	3.8	27.6	67	137	98
*NC 3211	19.4	78.4	6.8	61.0	50.4	8.9	5.0	26.6	69	142	99
McNair 440-V	19.3	79.6	6.7	59.3	48.0	8.5	4.6	29.1	66	132	92
McNair 444	18.7	79.6	6.5	59.1	47.8	8.2	4.3	29.4	72	144	91
Pioneer 309A	18.0	79.3	6.3	60.6	49.8	8.7	4.8	27.3	63	126	98
N. C. 27	17.9	81.5	6.3	59.5	48.3	9.3	5.3	28.8	75	142	91
L.S.D. (.05)	2.2	2.0	.8	1.9	2.6	.6	.5	2.7	8	11	5
(.01)	2.9	2.8	1.0	2.5	3.5	.8	.7	3.6	11	14	7
C.V. (%)	7.5	1.7	7.5	2.1	3.6	4.6	7.9	6.6	8	5	4

[1/] Corrected to a standard 65% moisture.

* Experimental

Table 36. Performance of corn silage - Piedmont - Area III. Gaston, Rowan and Alamance Counties - 1965.

Entries	Green Wt. Tons/A [1]	Moisture %	Dry Matter Tons/A	TDN %	ENE %	Crude Protein %	Digestible Protein %	Crude Fiber %	Ear Height Inches	Stalk Height Inches	Stand Count %	Lodging %
Dixie 82	16.7	72.4	5.9	61.1	50.5	7.7	3.9	26.5	55	125	90	8
Pioneer 3009	16.3	71.4	5.7	62.1	51.9	7.9	4.1	25.1	48	121	92	8
N.C. 270	15.8	73.4	5.5	61.9	51.6	8.5	4.6	25.4	50	126	88	7
Best X-7	15.8	71.6	5.5	62.7	52.7	8.2	4.3	24.2	50	126	88	16
Wagwood 200	15.7	72.6	5.5	63.1	53.3	8.4	4.5	23.6	44	118	89	15
*Tehua X CI. 44 OP	15.5	79.5	5.4	54.8	41.8	8.3	4.4	35.6	95	144	84	18
McNair 440V	15.5	73.6	5.4	61.4	50.9	8.5	4.6	26.1	46	112	88	5
Coker 52	15.5	72.3	5.4	62.5	52.4	8.8	4.9	24.6	46	109	91	9
DeKalb 1212	15.4	72.0	5.4	61.8	51.5	7.8	3.9	25.4	51	125	90	8
*Wagwood 290 S	15.3	72.3	5.4	61.1	50.6	8.0	4.1	26.5	48	124	91	8
DeKalb 1055	15.3	74.4	5.4	61.6	51.3	8.6	4.6	25.7	50	119	93	7
N.C. 27	15.1	73.1	5.3	62.0	51.8	8.0	4.2	25.2	51	123	84	6
DeKalb 1051	15.0	73.3	5.3	64.6	55.3	9.3	5.3	21.5	55	121	92	11
McNair 444	15.0	71.9	5.3	62.5	52.5	8.5	4.6	24.5	52	118	87	13
Mean of Test	15.0	72.7	5.3	62.0	51.8	8.4	4.5	25.2	50	119	88	10
Pioneer 3048	14.6	73.8	5.1	62.0	51.8	8.8	4.8	25.2	47	117	88	5
Coker 911	14.4	74.5	5.0	61.2	50.6	8.8	4.8	26.4	49	116	82	6
DeKalb 1006	14.4	71.5	5.0	62.3	52.1	7.8	4.0	24.8	48	116	89	8
Hofmeyer's H-601	14.4	71.1	5.0	63.6	54.0	8.6	4.7	22.9	46	116	90	6
McNair 425	14.0	74.4	4.9	61.7	51.4	8.6	4.7	25.6	51	118	88	7
Watson 401A [2]	13.9	68.3	4.9	63.9	54.4	8.8	4.8	22.4	36	105	84	23
Asgrow 300 [2]	13.7	69.4	4.8	63.4	53.7	8.1	4.2	23.1	44	117	88	11
Watson 430 [2]	13.2	71.7	4.6	63.3	53.5	8.7	4.8	23.4	38	105	86	13
L.S.D. (.05)	2.0	2.3	.7	1.6	2.2	.9	.8	2.3	6	6	8	10
(.01)	2.7	3.1	.9	2.1	3.0	1.2	1.1	3.1	7	8	10	13
C.V. (%)	16.3	3.9	16.3	3.1	5.2	12.6	21.9	1.1	13	6	10	122

*Experimentals

[1] Corrected to a standard 65% moisture.

[2] Racoon damage 5 to 20% at the Rowan County location.

Table 37. Performance of corn silage - Southern Coastal Plain - Area IV. Sampson County - 1965.

Entries	Green Wt. Tons/A[1/]	Moisture %	Dry Matter Tons/A	TDN %	ENE %	Crude Protein %	Digestible Protein %	Crude Fiber %	Ear Height Inches	Stalk Height Inches	Stand Count %	Lodging %
Dixie 18	21.5	68.4	7.5	60.7	50.0	6.6	2.8	27.0	58	125	92	6
Coker 911	20.2	67.6	7.1	59.9	48.9	7.7	3.8	28.2	48	112	98	2
*Tehua	19.6	79.9	6.8	51.5	37.2	5.6	1.9	40.4	94	151	88	18
McNair 440-V	19.4	68.0	6.8	61.2	50.7	6.7	3.0	26.3	45	108	95	3
Wagwood 200	18.4	67.8	6.4	62.3	52.2	7.1	3.3	24.8	48	112	98	1
*Tehua X CI. 44 OP	17.7	77.8	6.2	51.2	36.8	6.5	2.7	40.8	90	156	91	16
N. C. 270	17.6	72.4	6.2	58.3	46.6	7.2	3.4	30.6	52	118	98	3
Dixie 82	17.6	70.8	6.2	61.2	50.6	7.1	3.5	26.4	52	118	95	2
Mean of Test	17.6	71.0	6.2	60.2	49.2	7.0	3.2	27.9	55	118	95	4
McNair 425	17.5	69.2	6.1	60.9	50.3	7.1	3.3	26.8	49	114	96	3
DeKalb 1212	17.4	71.6	6.1	59.7	48.6	7.0	3.2	28.5	52	117	96	3
S. C. 236	17.3	67.9	6.1	60.3	49.3	6.0	2.3	27.7	50	114	98	1
Pioneer 3009	17.1	70.9	6.0	61.1	50.5	6.7	2.9	26.6	49	112	99	2
Best X-7	16.9	68.8	5.9	61.6	51.3	6.6	2.8	25.7	49	112	92	5
DeKalb 1051	16.1	73.3	5.6	62.7	52.8	7.8	3.9	24.1	53	111	98	3
Coker 74	16.1	72.4	5.6	61.4	50.9	8.2	4.3	26.1	45	107	96	2
*Wagwood 2905	15.8	71.9	5.5	61.8	51.5	7.1	3.3	25.5	49	120	97	3
McNair 444	15.7	69.3	5.5	63.0	53.2	7.2	3.4	23.7	52	112	95	3
Hefmeyer's H-601	15.2	69.1	5.3	63.9	54.4	7.0	3.2	22.5	46	109	95	2
L.S.D. (.05)	1.8	2.3	.6	.9	1.2	.7	.7	1.3	4	6	6	5
(.01)	2.4	3.1	.8	1.2	1.6	1.0	.9	1.7	6	8	8	7
C.V. (%)	7.2	2.3	7.2	1.0	1.7	7.3	15.0	3.1	5	3	4	92

[1/] Corrected to a standard 65% moisture.

* Experimental

Table 38. Performance of sorghum silage - Piedmont - Area III. Three-year average 1963-1964-1965. Average of 7 locations.

Entries	Dry Matter Tons/A	Moisture %	TDN %	ENE %	Crude Protein	Digestible Protein %	Crude Fiber %	Stalk Height Inches	Days from Planting to Mid Bloom
Pioneer 930	9.8	64.7	54.0	40.6	7.2	3.4	36.8	138	89
T-E Haygrazer	7.9	66.7	59.5	48.2	8.0	4.1	28.9	113	73
T-E Grazemaster	7.8	65.8	57.5	45.6	7.6	3.8	31.7	120	78
Sart	7.6	71.3	61.1	50.6	6.8	3.0	26.4	113	87
T-E Yieldmaker	7.5	68.9	62.0	51.8	7.7	3.9	25.1	104	78
T-E Milkmaker	7.3	68.1	62.3	52.2	8.2	4.3	24.8	98	78
Frontier S-214	7.3	71.2	60.9	50.2	7.8	3.9	26.9	103	87
P.A.G. Si Chow 2	7.1	69.6	61.1	50.5	7.2	3.4	26.5	108	83
Mean of Test	6.9	67.9	60.8	50.1	7.8	3.9	26.9	102	78
Aztec	6.7	69.2	62.6	52.6	7.6	3.8	24.3	103	77
NK 320	6.6	68.1	62.4	52.3	7.8	3.9	24.6	96	75
NK 300	6.3	65.7	63.2	53.4	9.0	5.0	23.5	74	73

Table 39. Performance of sorghum silage - Piedmont - Area III. Two-year average - 1964-1965. Average of 6 locations.

Entries	Green Wt. Tons/A [1]	Moisture %	Dry Matter Tons/A	TDN %	ENE %	Crude Protein %	Digestible Protein %	Crude Fiber %	Plant Height Inches	Days from Planting to Mid Bloom	Lodging %
Pioneer 930	27.6	64.2	9.7	54.4	41.2	7.5	3.6	36.2	137	88	15
T-E Haygrazer	21.1	66.4	7.4	59.2	47.8	8.4	4.5	29.2	112	73	10
T-E Grazemaster	21.0	65.4	7.3	58.0	46.2	8.0	4.2	31.0	120	78	6
Sart	20.6	71.4	7.2	60.8	50.1	7.0	3.2	27.0	114	88	28
Frontier S-214	19.9	71.2	7.0	60.6	49.8	8.0	4.2	27.4	106	87	22
T-E Milkmaker	19.4	68.2	6.8	61.3	50.8	8.3	4.4	26.3	102	76	63
T-E Yieldmaker	18.9	69.0	6.6	61.6	51.2	8.2	4.2	25.8	108	77	50
P.A.G. Si Chow 2	18.6	70.4	6.5	61.2	50.6	7.5	3.7	26.4	107	84	35
Mean of Test	18.4	67.8	6.4	60.8	50.0	8.2	4.3	27.0	101	78	28
T-E Silomaker	18.2	66.4	6.4	62.2	52.0	8.5	4.6	25.0	88	74	22
Grazer A	17.8	66.9	6.2	60.9	50.2	8.2	4.3	26.8	106	70	28
NK 300	17.4	64.7	6.1	62.7	52.8	8.9	4.9	24.2	78	72	22
Aztec	17.2	68.7	6.0	62.6	52.6	8.0	4.2	24.4	103	76	42
Texas Seeded Ribbon	17.0	77.5	6.0	59.9	48.8	7.4	3.5	28.3	110	94	40
NK 320	17.0	67.3	5.9	62.4	52.3	8.2	4.4	24.6	96	74	60
Advance 1071 F	15.4	68.4	5.4	62.9	53.0	8.3	4.4	24.0	98	72	45

[1] Corrected to a standard 65% moisture

Table 40. Performance of sorghum silage - Piedmont - Area III. Rowan, Chatham and Stanly Counties - 1965

Entries	Green Wt. Tons/A 1/	Moisture %	Dry Matter Tons/A	TDN %	ENE %	Crude Protein	Digestible Protein %	Crude Fiber %	Plant Hieght Inches	Days from Planting to Mid Bloom	Lodging %
Pioneer 931	20.5	66.0	7.2	54.8	41.7	7.2	3.4	35.7	129	87	0
Pioneer 930	20.3	67.5	7.1	53.6	40.0	7.4	3.6	37.4	136	89	0
Beefbuilder - T	18.1	72.7	6.3	62.2	52.0	7.2	3.4	25.0	113	79	45
T-E Haygrazer	17.5	67.7	6.1	59.0	47.6	8.2	4.3	29.5	114	73	12
Sart	17.3	72.0	6.1	61.3	50.8	6.6	2.9	26.2	111	86	21
Advance 108 5F	17.3	72.1	6.0	60.9	50.3	7.3	3.4	26.7	108	83	42
T-E Milkmaker	16.5	70.5	5.8	60.7	49.9	7.7	3.9	27.2	102	74	60
T-E Grazemaster	16.4	67.7	5.7	58.0	46.2	7.9	4.1	31.0	122	75	2
Grazer A	16.2	68.8	5.7	60.7	49.9	8.0	4.1	27.1	113	70	25
Frontier S-214	16.2	74.4	5.7	60.4	49.5	7.8	4.0	27.6	103	84	17
T-E Yieldmaker	16.1	71.4	5.6	60.5	49.7	7.5	3.6	27.3	112	76	59
T-E Yieldmaker A	15.7	70.2	5.5	61.5	51.0	7.8	3.9	26.0	95	76	44
P-A-G-Si-Chow 2	15.5	71.7	5.4	61.6	51.2	7.2	3.4	25.8	108	82	16
Aztec	15.4	71.3	5.4	62.1	51.8	7.5	3.6	25.1	108	74	32
NK 300	15.4	67.1	5.4	61.7	51.4	8.7	4.7	25.6	82	71	36
T-E Silomaker	15.1	70.3	5.3	61.7	51.4	8.1	4.2	25.6	90	74	35
Mean of Test	15.1	69.6	5.3	60.4	49.5	7.9	4.1	27.6	102	77	23
NK 320	15.0	70.1	5.2	62.5	52.5	7.9	4.1	24.5	100	74	57
Silo Fill 33	14.8	70.3	5.2	59.9	48.8	8.6	4.7	28.3	98	75	25
*Frontier 206 FX	14.4	67.8	5.0	58.9	47.4	8.3	4.4	29.8	90	84	5
*Frontier 202 FX	13.8	71.3	4.8	60.8	50.1	8.8	4.9	26.9	72	77	25
Green Gro	13.8	66.8	4.8	59.2	47.9	8.6	4.7	29.1	109	70	9
DeKalb FS-1a	13.6	65.7	4.8	62.3	52.2	9.0	5.0	24.7	75	70	17
NK 315	13.6	67.8	4.7	62.6	52.6	8.1	4.2	24.3	90	67	3
Advance 1071 F	12.8	70.5	4.5	63.3	53.6	7.9	4.0	23.3	104	72	34
Southern Cross	12.5	60.3	4.4	57.9	46.1	8.1	4.2	31.1	116	67	1
AK 43	11.2	74.1	3.9	59.9	48.9	9.0	5.0	28.2	80	84	0
Texas Seeded Ribbon	10.0	80.0	3.5	59.8	48.7	7.2	3.4	28.4	105	96	23
Hegari	7.6	62.5	2.6	62.6	52.6	8.4	4.5	24.3	57	65	9
L.S.D. (.05)	2.5	2.8	.9	1.8	2.6	.8	.8	2.7	7	5	35
(.01)	3.3	3.7	1.2	2.5	3.4	1.1	1.0	3.6	9	6	46
C.V. (%)	20.0	4.8	20.0	3.7	6.2	12.5	22.9	11.7	8	7	180

* Experimental
1/ Corrected to a standard 65% moisture

Part IV

SOYBEAN VARIETIES

The soybean is an important cash crop in North Carolina and is planted throughout the Coastal and Piedmont areas. This is reflected by the increase in acreage planted the last few years. Since 1954, the acreage has more than doubled to over an estimated 810 thousand acres planted in 1965. In 1962, around 91% of the soybeans produced in the United States went into edible use and 9% into industrial uses. This type of use would indicate continued demands for soybeans.

With the improvement in cultural practices and varieties, yields are at a high level. The relatively high prices received by growers make it profitable for farmers to produce soybeans.

Four different maturity groups are grown in North Carolina - Groups V, VI, VII, and VIII - with maturity dates ranging from September 16 to November 10, depending upon the group in which the variety is classified. Group V is the earliest and Group VIII the latest maturing.

There are several high yielding varieties available to the producer from which he may choose according to desired maturity date, lodging resistance, etc. Information on the performance of commercial varieties and experimental lines grown in different locations in the state is provided in this report. This information serves as a guide to growers and agricultural workers in choosing a variety and to soybean breeders in their development of varieties.

EXPERIMENTAL PROCEDURE

Experimental lines and commercial varieties developed by both public and private agencies are included in this program. In order to qualify for acceptance the proposed entry must reveal meritorious performance when compared with

recognized varieties.

Any individual or firm may make application for having entries included. A fee is charged on an entry basis. Personnel of the testing program may include entries about which further information is desired.

Agencies Sponsoring Entries

Coker's Pedigreed Company, Hartsville, South Carolina

N. C. Agricultural Experiment Station and U.S.D.A., Raleigh, N. C.

Test Locations

Five tests were conducted in 1965 with three in the Coastal Plain Area and two in the Piedmont Area, as shown in Figure 1. All were located on private farms except in the Rowan County test, which was conducted on an Experiment Station.

Seasonal Conditions

The growing season was generally favorable for the production of soybeans in the Coastal Plain and Piedmont Areas of North Carolina for 1965. All tests had good moisture at planting and good stands were obtained at all locations. The season was good in the Piedmont and so were the yields except for the early test in Montgomery County which was lost due to excess water.

The late test in Duplin County was located on heavy sand and excess moisture during the growing season resulted in poor yield. Therefore, this location was not included in the report.

Cultural Practices

Seed bed preparation, date of planting, fertilization and other cultural practices were in accord with good farming practices and are listed in Table 41. Planting, harvesting and yield measurements were directly supervised by personnel of the North Carolina Agricultural Experiment Station.

Table 41. Cultural practices for soybean performance trials.

Area and Co-operator	Fertilizer lbs/A	Row Spacing Inches	Date of Planting	Date of Harvest
Coastal Plain				
Duplin County W. G. Sullivan	300 0-25-25	40"	May 19	Early October 28 Late November 8
Perquimans County L. B. Elliot	300 0-25-25	40"	May 18	November 1
Washington County Leon Dunbar	300 0-25-25	40"	May 18	November 1
Piedmont				
Rowan County Clyde McSwain	300 0-25-25	40"	May 17	November 3
Montgomery County Homer Haywood	300 0-25-25	40"	May 19	November 4

Criteria for Evaluating Soybean Varieties

Yield bu./acre. Each plot was harvested and weighed and converted to bushels per acre. All yields were adjusted to 14% moisture.

Moisture. A sample was taken from each plot immediately after the beans were weighed. The samples were placed in waterproof, plastic-coated paper bags and the moisture percent was determined on a Tag Heppenstall moisture meter.

Plant Height. Plant height was determined by measuring from the ground to top of the plant in inches.

Lodging. Lodging was rated according to the following scale:

1 All errect

2 Few plants leaning or down

3 All plants leaning at 45 degrees

4 All plants down

Maturity Group. Maturity groups ranged from Group V through Group VIII.

The dates of maturity are as follows:

Group V	September 16-30
Group VI	October 1-16
Group VII	October 17-31
Group VIII	November 1-10

RESULTS

Performance data over a two and three year period are shown in Tables 42 and 43. Varietal performance varied between locations, depending upon the seasonal conditions. Tables 44 through 47 show data on yield from each location as well as the mean for the five locations. It would depend on maturity desired, plant characteristics and other factors as to what variety would be best.

The maturity group in which each entry belongs is listed in Tables 44 and 45. The approximate date of maturity for these groups has been presented earlier. Information on lodging, plant height and moisture are shown in Tables 46 and 47.

The data should be considered not only for yield but for maturity group and other characters which might influence the selection of a variety. All available data should be studied to aid in selecting a variety that best fits the management practices of the producer.

Table 42. Performance of Soybeans. Two Year Average - 1964-1965
Average of 9 locations

Entries	Yield Bu/Ac	Lodging	Plant Height Inches	Moisture
Hood	41.6	2.6	35	13.78
Coker Hampton 266	41.2	2.8	42	12.81
Dare	41.0	1.9	32	13.67
Lee	40.6	2.2	36	12.34
N62-136	39.8	2.4	36	12.28
Jackson	39.6	2.0	45	12.06
Mean of Test	38.8	2.6	38	12.64
N62-37	38.0	1.9	36	12.18
Bragg	37.3	2.9	45	11.86
Hill	37.3	3.6	34	13.76

Table 43. Performance of Soybeans. Three Year Average - 1963-1964-1965
Average of 13 locations

Entries	Yield Bu/Ac	Lodging	Plant Height Inches	Moisture
Dare	41.3	2.1	35	13.59
Coker Hampton 266	41.1	2.5	42	12.96
Hood	41.0	2.6	35	13.53
Lee	40.9	2.5	36	12.63
Jackson	39.2	1.7	45	12.55
Mean of Test	39.1	2.5	38	12.80
Bragg	38.1	2.6	46	12.25
Hill	37.4	3.6	35	13.59

EARLY MATURING ENTRIES

Table 44. Performance of Soybeans by Locations and Combined (Bu/A) 1965

Entries	Duplin	Perquimans	Washington	Rowan	Average	Maturity Group
			Commercial Varieties			
Hill	39.4	27.9	27.6	45.9	35.2	V
Dare	45.5	30.1	32.7	57.2	41.4	VI
Hood	44.5	27.7	40.0	58.9	42.8	VI
			Experimentals			
N59-6913	40.6	26.7	29.9	59.0	39.0	V
N59-6958	44.4	32.2	33.7	50.8	40.5	VI
Mean of Test	42.9	29.1	32.8	54.3	39.8	
L.S.D. (.05)	3.7	N.S.	3.3	6.2	N.S.	
(.01)	N.S.	N.S.	4.7	8.6	N.S.	
C.V. (%)	6	12	7	7	17	

LATE MATURING ENTRIES

Table 45. Performance of Soybeans by Locations and Combined (Bu/A) 1965

Entries	Montgomery	Perquimans	Washington	Rowan	Average	Maturity Group
			Commercial Varieties			
Bragg	39.5	30.7	37.6	43.7	37.9	VII
Jackson	52.4	32.2	32.4	44.8	40.5	VII
Lee	43.3	33.7	37.5	45.2	39.9	VII
Coker Hampton 266	56.8	34.8	25.5	51.0	42.0	VIII
			Experimentals			
Composite A	29.6	35.0	34.5	45.4	36.1	VI
NC 1-2	37.0	34.2	37.4	41.0	37.4	VI
N62-37	42.0	30.0	35.2	38.7	36.5	VII
N63-1131	48.6	37.9	39.4	48.8	43.7	VII
N63-1221	43.7	36.7	37.0	43.4	40.2	VII
N63-1394	42.9	27.7	38.1	43.5	38.0	VII
N63-700	45.3	33.4	41.3	43.6	40.9	VII
N63-1712	55.5	30.4	40.5	50.5	44.2	VII
N63-1926	54.5	32.9	39.2	53.6	45.0	VII
Composite B	38.7	32.0	35.2	42.3	37.1	VII
N63-1852	50.0	30.2	38.0	44.4	40.6	VII
N62-136	37.9	31.6	36.0	43.0	37.1	VII
N63-858	44.8	36.2	37.0	49.6	41.9	VII
N63-1285	47.0	29.7	36.1	43.5	39.1	VII
N63-1130	45.7	40.6	44.2	49.0	44.9	VII
Coker 3208	55.4	36.9	24.9	49.7	41.7	
Mean of Test	45.5	33.3	36.4	45.7	40.2	
L.S.D. (.05)	9.9	6.9	3.5	5.2	N.S.	
(.01)	13.1	N.S.	4.7	6.9	N.S.	
C.V. (%)	15	15	7	8	23	

EARLY MATURING ENTRIES

Table 46. Lodging, Plant Height and Moisture of Soybean Varieties Combined for Duplin, Rowan, Perquimans and Washington Counties. 1965

Entries	Lodging 1/	Plant Height (inches)	Moisture %
	Commercial Varieties		
Hill	3.2	36	10.87
Dare	1.8	36	10.64
Hood	2.2	38	11.08
	Experimentals		
N59-6913	1.5	34	10.73
N59-6958	2.0	38	10.71
Mean of Test	2.2	36	10.81
L.S.D. (.05)	N.S.	2	N.S.
(.01)	N.S.	2	N.S.
C.V. (%)	36	6	5

1/ Average of Rowan County only.

LATE MATURING ENTRIES

Table 47. Lodging, Plant Height and Moisture of Soybean Varieties Combined for Montgomery, Rowan, Perquimans and Washington Counties. 1965

Entries	Lodging 1/	Plant Height (inches)	Moisture %
	Commercial Varieties		
Bragg	2.8	44	10.22
Jackson	2.0	42	10.38
Lee	1.5	33	10.26
Coker Hampton 266	2.5	42	11.91
	Experimentals		
Composite A	1.5	37	10.53
NC 1-2	1.0	34	10.20
N62-37	1.8	36	10.16
N63-1131	1.8	39	10.27
N63-1221	2.8	40	10.46
N63-1394	2.8	43	10.44
N63-700	1.8	43	10.13
N63-1712	1.8	42	10.00
N63-1926	2.2	40	10.56
Composite B	2.5	41	10.04
N63-1852	2.8	43	10.16
N62-136	1.8	36	10.13
N63-858	2.0	42	10.17
N63-1285	2.2	39	10.38
N63-1130	1.8	40	10.15
Coker 3208	1.2	36	10.92
Mean of Test	2.0	40	10.37
L.S.D. (.05)	.8	3	.66
(.01)	1.1	4	.87
C.V. (%)	29	10	9

1/ Average of Rowan County only.

Part V

COTTON

Cotton is making an important comeback as a major agricultural crop in North Carolina. This comeback is due in part to an increase in more efficient production practices, better insect control and higher yielding varieties. All these factors add up to more profitable cotton production.

With the shift to mechanization, there is a need for cottons that are better adapted for mechanical harvesting. Some varieties are being bred for mechanical picking. Under certain conditions, certain characteristics such as smoothleaf give varieties a distinct grade advantage over other varieties when harvested mechanically. Breeders are constantly searching for genetic characters which will be advantageous to the cotton producer.

Through the continued effort of plant breeders, more varieties are being developed to suit the various environmental conditions and production systems which are present in North Carolina. The variety picture has changed notably within recent years and indications are that this trend will continue. Today, several high yielding varieties are available for planting. Varieties with more disease resistance are being developed which will be beneficial to North Carolina cotton producers.

The cotton producer thus has a choice of varieties for planting, and his success in production may be influenced considerably by his selection. Choice of variety is influenced not only by production potential, but also by suitability for mechanical harvesting, earliness of maturity, quality of fiber, storm resistance, and disease resistance.

This report provides information on the performance of commercial varieties and experimental lines grown in various geographical areas of the state. This information serves as a guide to cotton breeders in their future development of varieties, to agricultural workers, and to growers for use in choosing a variety to plant.

The results of the North Carolina Official Cotton Variety Trials for the 1965 season, and summaries of the tests conducted during the past three years are presented in this report.

EXPERIMENTAL PROCEDURE

Experimental lines and commercial varieties developed by public and private agencies are included in this report. One requirement for acceptance is quantitative data from experiments in which the proposed entry is compared with recognized varieties. These data must reveal meritorious performance in order for a variety to qualify for the tests.

Any individual or firm may make application for having entries included. A fee is charged on an entry basis. Personnel of the testing program may include entries about which further information is desired.

Agencies Sponsoring Entries

Auburn University Agricultural Experiment Station, Auburn, Alabama

Coker's Pedigreed Seed Company, Hartsville, South Carolina

Cotton Hybrid Research Inc., Athens, Georgia

DeKalb Agricultural Association, Inc., Bogart, Georgia

Delta and Pine Land Company, Scott, Mississippi

McNair Seed Company, Laurinburg, North Carolina

North Carolina Agricultural Experiment Station, Raleigh, N. C.

Stoneville Pedigreed Seed Company, Stoneville, Mississippi

Test Locations

Four locations were used in 1965 with two in the Coastal Plain Area and two in the Piedmont as shown in Figure 1. All of the tests were located on private farms.[1/]

Seasonal Conditions

The 1965 growing season was not considered good for the maximum production of cotton. Considerable rain during the growing season caused lower yields at some locations.

The Scotland County test was planted in good soil conditions and a good stand was obtained. Fair growing conditions prevailed throughout the year and good yields were recorded.

The Halifax and Anson County tests were damaged more by weather conditions than the other two locations. Although the yields were fairly high there was considerable variation within the test at both Halifax and Anson County. The Scotland and Rutherford County tests were uniform and good yields were recorded.

Cultural Practices

Cultural practices, such as seed bed preparation, date of planting, fertilization, cultivation and insect control measures were in accord with good farming practices. These are listed for each test in Table 48. Planting, harvesting and yield measurements were directly supervised by personnel of the North Carolina Agricultural Experiment Station. The Scotland and Anson County test were harvested mechanically and the Halifax and Rutherford tests were hand picked.

Criteria for Evaluating Cotton Varieties

A randomized block design with six replications was used at each location.[2/]

[1/] The co-operative spirit and civic-minded service rendered by the farmers who provided land and the necessary cultural practices for these trials and the co-operation of the County Extension Chairman are gratefully acknowledged.

[2/] Statistical analyses were made in the Statistical Laboratory under the supervision of John O. Rawlings. This assistance is gratefully acknowledged.

Plot size at all locations was two rows 27 feet long. Row spacing was the same at each location as shown in Table 48.

Yield of Seed Cotton: The plots were harvested individually and average pounds of seed cotton per acre were calculated.

Yield of Lint: This was calculated using the lint percentage of each plot and converting the pounds of seed cotton per plot to pounds of lint per acre.

Lint Percentage: Boll samples were taken from each plot at each location. The weight of lint ginned from this sample of seed cotton was expressed as a percentage of the weight of seed cotton.

Staple Length:[3/] A Federal Cotton Inspector determined the staple length on the ginned samples of each plot.

Bolls per Pound of Seed Cotton: The number of bolls required to make one pound of seed cotton was determined by weighing the 50 boll samples from each plot at each location and converting it to a pound basis.

Span Length: The length which a certain percentage of fibers from the original fiber population would span when caught at random along the length of the fiber.

Uniformity Ratio: Ratio of 50% span length to 2.5% span length.

Micronaire: The micronaire test is a test for fineness of the fiber. The micronaire instrument is used to measure the resistance to the passage of air through a 50 grain sample of cotton compressed to a given volume.

Tensile Strength: This indicates the tensile strength of the fiber in pounds per square inch.

[3/] Acknowledgement is given to the Cotton Division, Agricultural Marketing Service, U.S.D.A., Raleigh, North Carolina, for making staple length determinations.

Table 48. Cultural practices for cotton performance trials.

Area and co-operator	Fertilizer lbs/A	Herbicide pre-emerge	Row Spacing in.	Date of Planting	Date of Harvest
Scotland County A. F. McMillan	500 5-10-10	Treflan	40"	April 29	Nov. 2
Halifax County W. L. Pickett	300 10-20-20	Treflan	40"	April 23	Nov. 9
Anson County Thomas Rhyne	800 6-6-12	Treflan	40"	April 29	Oct. 28
Rutherford County Van McDaniels	300 10-20-20	Treflan	40"	May 13	Nov. 18

Key to Fiber Test Results

Fibrograph (Uniformity Ratio)

45 and above - Uniform

40 - 44.9 - Average

39.0 and below - Irregular

Micronaire (Fib. wt./in. - Micrograms)

2.9 and below - Very fine

3.0 - 3.9 - Fine

4.0 - 4.9 - Average

5.0 - 5.9 - Coarse

6.0 and above - Very coarse

Pressley (Tensile Strength, 1000 psi)

96 and above - Very strong

86 - 95 - Strong

76 - 85 - Average

66 - 75 - Fair

65 and below - Weak

The operations and measurements required for the development of data on yield and such other agronomic characters as boll size and lint percentage were performed by personnel at the experiment station. Fiber samples from all replications at all locations were sent to the North Carolina Department of Agriculture, Markets Division, Engineering Section for analyses.[4/]

[4/] Fiber analysis was made in the Markets Division, Engineering Section, N.C.D.A., under the supervision of Charles B. Elks. The assistance of Mr. Elks and his staff is gratefully acknowledged.

Table 49. Performance of cotton varieties - Three Year Average - 1963-1964-1965. Average of 10 locations.

Variety or Line	Lint lbs/A	Seed cotton lbs/A	Lint %	Staple length in.	Bolls/lb. of seed cotton	Fiber Properties					
						Span Length			Uniformity Ratio	Micronaire Fib. wt./in. micrograms	Tensile Strength "Pressley"
						66.7% (expressed in in.)	50% (expressed in in.)	2.5% (expressed in in.)			
Coker Carolina Queen	839	2276	36.8	1 3/32	76	.40	.52	1.09	47	4.6	80.8
McNair 1032	834	2298	36.2	1 3/32	82	.39	.50	1.04	48	4.6	82.2
Dixie King II	817	2208	37.0	1 3/32	64	.39	.51	1.06	48	4.5	81.1
Dixie King 6374	807	2105	38.3	1 3/32	74	.38	.49	1.04	47	4.6	79.6
Mean of Test	790	2180	36.3	1 3/32	74	.40	.51	1.08	47	4.4	80.4
Rex Smoothleaf	788	2245	35.3	1 3/32	68	.39	.51	1.07	47	4.3	78.0
Rex	786	2198	35.9	1 3/32	70	.39	.50	1.07	47	4.2	77.4
Deltapine 7139	770	2065	37.3	1 1/8	82	.40	.51	1.07	48	4.4	77.4
DeKalb 220	753	2109	35.8	1 1/8	72	.40	.51	1.09	47	4.3	78.5
DeKalb 108	753	2144	35.1	1 1/8	70	.40	.51	1.09	47	4.3	79.2
Auburn 56	747	2186	34.3	1 3/32	72	.39	.51	1.06	48	4.4	77.1
Coker 100A (WR)	741	2065	36.0	1 1/8	77	.40	.52	1.11	47	4.4	78.4

Table 50. Performance of cotton varieties - Two Year Average - 1964-1965. Average of 6 locations.

Variety or Line	Lint lbs/A	Seed cotton lbs/A	Lint %	Staple length in.	Bolls/lb. of seed cotton	Fiber Properties: Span Length 66.7% (expressed in in.)	Span Length 50% (expressed in in.)	Span Length 2.5% (expressed in in.)	Uniformity Ratio	Micronaire Fib. wt./in. micrograms	Tensile Strength "Pressley"
Coker Carolina Queen	915	2470	36.8	1 1/8	74	.40	.52	1.09	48	4.5	80.4
McNair 1032	900	2466	36.2	1 1/8	83	.40	.50	1.04	48	4.5	81.2
Dixie King II	876	2346	37.0	1 1/8	64	.40	.51	1.06	48	4.4	80.5
TH 149-R	875	2452	35.3	1 1/8	64	.43	.55	1.14	49	4.4	87.4
Dixie King 6374	862	2220	38.6	1 1/8	74	.39	.50	1.04	48	4.6	78.2
Rex Smoothleaf	857	2414	35.4	1 1/8	68	.40	.51	1.07	48	4.2	77.2
Mean of Test	856	2336	36.4	1 1/8	74	.40	.52	1.08	48	4.4	79.6
Stoneville 213	848	2270	37.1	1 1/8	80	.40	.51	1.06	48	4.6	77.0
Rex	838	2316	36.0	1 1/8	70	.40	.50	1.08	47	4.2	77.1
Deltapine 7139	838	2210	37.7	1 1/8	82	.41	.52	1.07	49	4.6	76.9
Auburn 56	807	2364	34.0	1 1/8	71	.40	.51	1.06	48	4.4	75.6
Coker 100A (WR)	800	2212	36.0	1 1/8	77	.40	.52	1.10	47	4.4	77.8
DeKalb 220	799	2216	35.8	1 1/8	72	.41	.52	1.10	48	4.3	77.2
DeKalb 108	794	2250	35.0	1 1/8	70	.40	.52	1.08	48	4.2	78.6

Table 51. Performance of cotton varieties. Average of four locations - Scotland, Halifax, Anson and Rutherford Counties - 1965

Variety or line	Lint lbs/A	Seed cotton lbs/A	Lint %	Staple length in.	Bolls/lb. of seed cotton	Fiber Properties: Span Length 66.7% (expressed in in.)	Span Length 50% (expressed in in.)	Span Length 2.5% (expressed in in.)	Uniformity Ratio	Micronaire Fib. wt./in. micrograms	Tensile Strength "Pressley"
Coker 2202	784	2063	37.8	1 1/8	83	.41	.51	1.07	48	5.0	81.9
Pennington Hy-Bee	753	2100	35.7	1 1/8	76	.42	.53	1.11	48	4.3	82.0
TH 149-R	753	2177	34.1	1 5/32	67	.45	.56	1.15	49	4.4	87.8
Coker Carolina Queen	752	2056	36.2	1 1/8	78	.42	.53	1.11	48	4.5	81.2
Hy-Bee 66	744	2059	35.9	1 1/8	72	.42	.53	1.12	47	4.3	83.2
Coker 230-5908	743	1965	37.5	1 1/8	81	.41	.51	1.09	47	4.8	81.3
Dixie King 6374	740	1927	38.0	1 1/8	77	.40	.50	1.07	47	4.5	81.1
Dixie King II	734	2015	36.0	1 1/8	67	.42	.52	1.09	48	4.4	82.5
Rex Smoothleaf	717	2047	35.0	1 1/8	70	.41	.52	1.10	47	4.3	79.0
Coker 3210	710	1888	37.5	1 1/8	83	.42	.53	1.12	48	4.5	83.7
McNair 1032	703	2016	34.7	1 1/8	87	.41	.51	1.06	48	4.5	83.1
Mean of Test	699	1936	35.9	1 1/8	78	.42	.53	1.10	48	4.4	81.6
Deltapine 7139	693	1861	36.9	1 1/8	89	.43	.53	1.10	49	4.5	78.6
Coker 3903-1	691	1899	36.1	1 1/8	80	.43	.54	1.14	48	4.4	83.7
Auburn 56	678	2021	33.4	1 1/8	74	.41	.52	1.08	48	4.4	77.9
Coker 100A (WR)	674	1878	35.8	1 1/8	82	.42	.54	1.13	47	4.3	80.6
Rex	672	1894	35.3	1 1/8	72	.41	.52	1.10	47	4.2	78.8
DeKalb 220	658	1884	34.8	1 1/8	73	.42	.53	1.12	48	4.4	80.0
Coker 2421	656	1772	37.0	1 1/8	87	.43	.54	1.13	48	4.5	88.5
DeKalb 128	650	1816	35.6	1 1/8	75	.42	.52	1.11	47	4.4	81.3
Stoneville 213	637	1738	36.4	1 1/8	86	.41	.52	1.08	48	4.6	78.3
Deltapine 731	623	1730	35.7	1 1/8	86	.43	.53	1.10	49	4.5	79.0
DeKalb 108	617	1790	34.3	1 1/8	72	.41	.52	1.10	47	4.2	81.2
L.S.D. (.05)	100	NS	.9	.4/32	5	.01	.01	.02	2	.2	1.9
(.01)	NS	NS	1.3	.6/32	7	.02	.02	.02	3	.3	2.5
C.V. (%)	18	17	4	2	10	5	5	2	3	6	3

Table 52. Performance of cotton varieties - Anson County - 1965

Variety or Line	Lint lbs/A	Seed cotton lbs/A	Lint %	Staple length in.	Bolls/lb. of seed cotton	Fiber Properties					
						Span Length			Uniformity Ratio	Micronaire Fib. wt./in. micrograms	Tensile Strength "Pressley"
						66.7%	50%	2.5% (expressed in in.)			
Dixie King II	852	2372	35.9	1 1/8	80	.42	.52	1.11	47	4.0	85.9
Pennington Hy-Bee	756	2113	36.0	1 1/8	80	.44	.54	1.14	47	4.0	86.1
Coker 3903-1	729	2059	35.7	1 5/32	84	.45	.56	1.17	48	4.0	88.1
TH 149-R	725	2126	34.1	1 5/32	69	.45	.57	1.17	48	4.4	92.7
Dixie King 6374	709	1890	37.5	1 1/8	93	.39	.50	1.09	45	4.0	85.0
Rex Smoothleaf	694	1928	36.0	1 1/8	77	.42	.52	1.11	46	4.0	85.1
Hy-Bee 66	685	1889	36.2	1 5/32	75	.43	.54	1.15	46	4.0	89.4
Rex	679	1889	36.0	1 1/8	86	.42	.50	1.11	46	4.0	83.4
Auburn 56	666	1965	33.9	1 1/8	83	.42	.52	1.09	47	4.4	82.2
Mean of Test	654	1826	35.9	1 1/8	87	.43	.53	1.12	47	4.1	86.1
McNair 1032	649	1885	34.4	1 1/8	100	.42	.52	1.07	48	4.0	89.1
Coker 2421	644	1780	36.0	1 5/32	90	.44	.54	1.16	48	4.3	92.8
Coker 230-5908	641	1706	37.3	1 1/8	94	.42	.52	1.11	47	4.3	84.4
Deltapine 7139	638	1706	37.5	1 1/8	105	.43	.53	1.10	48	4.2	83.6
Coker Carolina Queen	636	1780	35.8	1 1/8	90	.42	.53	1.13	47	4.0	85.0
Deltapine 731	633	1748	36.3	1 1/8	95	.44	.53	1.13	48	4.3	84.2
DeKalb 220	632	1794	35.0	1 5/32	83	.43	.53	1.14	47	4.0	83.2
Coker 3210	628	1719	36.8	1 5/32	90	.43	.54	1.14	47	4.2	87.9
Coker 2202	622	1656	37.4	1 1/8	94	.41	.51	1.08	47	4.4	86.1
Coker 100A (WR)	618	1744	35.3	1 5/32	87	.42	.53	1.15	46	4.0	84.7
DeKalb 128	592	1702	35.0	1 5/32	80	.42	.51	1.14	46	4.2	85.4
Stoneville 213	496	1341	36.9	1 1/8	100	.42	.52	1.11	47	4.1	84.6
DeKalb 108	468	1369	34.2	1 1/8	83	.43	.53	1.12	47	3.8	85.9
L.S.D. (.05)	NS	476	1.3	.8/32	13	.03	.03	.03	NS	NS	3.3
(.01)	NS	NS	1.7	1/32	18	NS	NS	.04	NS	NS	4.3
C.V. (%)	24	23	3	2	13	6	6	2	4	10	3

Table 53. Performance of cotton varieties - Scotland County - 1965

Variety or Line	Lint lbs/A	Seed cotton lbs/A	Lint %	Staple length in.	Bolls/lb. of seed cotton	Fiber Properties: Span Length 66.7% (expressed in in.)	Span Length 50% (expressed in in.)	Span Length 2.5% (expressed in in.)	Uniformity Ratio	Micronaire Fib. wt./in. micrograms	Tensile Strength "Pressley"
Coker 2202	873	2247	38.8	1 5/32	83	.42	.52	1.09	48	4.7	78.3
Deltapine 7139	862	2246	38.4	1 5/32	92	.42	.54	1.11	48	4.2	75.9
Dixie King 6374	854	2179	39.2	1 1/8	77	.40	.52	1.07	48	4.5	76.4
Rex Smoothleaf	850	2478	34.3	1 3/16	75	.41	.53	1.12	47	4.2	78.0
Rex	846	2360	35.8	1 3/16	72	.41	.52	1.10	47	4.0	76.6
Dixie King II	844	2249	37.5	1 3/16	66	.41	.53	1.10	48	4.2	79.8
Coker 230-5908	834	2176	38.3	1 3/16	80	.40	.52	1.09	47	4.6	77.7
Hy-Bee 66	810	2259	35.9	1 5/32	77	.41	.53	1.12	47	4.2	80.8
McNair 1032	810	2277	35.5	1 5/32	93	.40	.51	1.07	48	4.3	80.7
Coker Carolina Queen	798	2173	36.7	1 5/32	82	.44	.55	1.14	48	4.2	76.7
Stoneville 213	796	2182	36.4	1 3/16	90	.42	.52	1.10	48	4.3	75.7
Mean of Test	793	2178	36.4	1 5/32	82	.42	.53	1.11	48	4.3	78.2
DeKalb 128	792	2174	36.4	1 3/16	80	.42	.53	1.12	48	4.2	78.3
Pennington Hy-Bee	791	2222	35.6	1 5/32	82	.42	.54	1.12	48	4.0	78.4
Coker 3903-1	772	2080	37.1	1 3/16	87	.42	.54	1.14	48	4.2	80.7
Coker 2421	766	2021	37.9	1 3/16	93	.43	.56	1.15	48	4.3	83.7
Coker 3210	765	2053	37.3	1 3/16	91	.42	.54	1.14	48	4.3	79.4
DeKalb 220	754	2136	35.3	1 3/16	75	.42	.54	1.12	48	4.2	75.6
TH 149-R	742	2150	34.4	1 3/16	73	.44	.57	1.17	48	4.0	84.3
Deltapine 731	740	2066	35.9	1 3/16	91	.42	.54	1.11	49	4.2	76.5
Auburn 56	721	2134	33.8	1 1/8	78	.41	.52	1.09	48	4.2	73.4
DeKalb 108	712	2048	34.8	1 5/32	73	.40	.52	1.09	48	4.2	78.2
Coker 100A (WR)	710	2006	35.4	1 3/16	88	.42	.54	1.13	48	4.1	75.6
L.S.D. (.05)	77	185	1.6	1/32	8	.02	.02	.02	NS	.3	2.5
(.01)	102	245	2.1	1.3/32	11	NS	.03	.03	NS	.3	3.3
C.V. (%)	8	7	4	2	9	5	4	2	3	5	3

Table 54. Performance of cotton varieties - Halifax County - 1965

Variety or Line	Lint lbs/A	Seed cotton lbs/A	Lint %	Staple length in.	Bolls/lb. of seed cotton	Fiber Properties: Span Length 66.7% (expressed in in.)	Span Length 50% (expressed in in.)	Span Length 2.5% (expressed in in.)	Uniformity Ratio	Micronaire Fib. wt./in. micrograms	Tensile Strength "Pressley"
TH 149 R	1031	2759	37.3	1 1/16	66	.41	.51	1.08	47	4.6	88.6
Coker Carolina Queen	1002	2550	39.3	1 1/16	70	.39	.49	1.04	47	5.1	83.1
Coker 2202	980	2379	41.3	1 1/16	79	.37	.46	.97	47	5.6	84.5
Dixie King 6374	935	2301	40.8	1 1/16	76	.37	.45	.98	46	4.8	82.8
Hy-Bee 66	916	2417	38.0	1 1/16	70	.39	.48	1.06	46	4.4	81.6
Pennington Hy-Bee	902	2336	38.7	1 1/16	75	.39	.48	1.04	46	4.4	82.4
Coker 3210	885	2208	40.0	1 1/16	76	.40	.49	1.06	47	4.8	85.6
Coker 230-5908	868	2156	40.0	1 1/16	76	.38	.48	1.02	47	5.1	83.5
Coker 3903-1	836	2113	39.6	1 1/16	76	.40	.50	1.06	47	4.7	84.7
Mean of Test	829	2145	38.7	1 1/16	75	.39	.48	1.03	47	4.7	82.7
Dixie King II	825	2124	38.9	1 1/16	64	.39	.47	1.02	48	4.6	84.8
Rex Smoothleaf	818	2218	37.0	1 1/16	66	.39	.48	1.05	46	4.5	77.0
McNair 1032	812	2159	37.8	1 1/16	84	.37	.46	.99	46	4.7	81.6
Deltapine 7139	802	2044	39.4	1 1/16	80	.40	.49	1.03	48	4.8	78.6
DeKalb 108	801	2195	36.6	1 1/16	69	.38	.47	1.03	46	4.4	83.1
Stoneville 213	793	2048	38.7	1 1/16	81	.39	.48	1.01	47	4.8	79.2
Auburn 56	781	2153	36.2	1 1/16	69	.38	.47	1.02	46	4.6	80.5
Coker 100A (WR)	775	1976	39.0	1 1/16	86	.38	.48	1.04	46	4.5	82.7
DeKalb 220	747	2012	37.2	1 1/16	70	.39	.49	1.04	47	4.6	82.8
DeKalb 128	728	1894	38.5	1 1/16	72	.38	.48	1.03	46	4.6	83.5
Deltapine 731	692	1801	38.3	1 1/16	82	.41	.51	1.04	49	4.7	79.4
Rex	658	1742	37.8	1 1/16	67	.39	.48	1.04	46	4.2	80.9
Coker 2421	654	1606	40.7	1 1/16	88	.38	.48	1.04	46	4.6	89.6
L.S.D. (.05)	186	493	1.2	.5/32	8	.02	.03	.03	NS	.3	3.7
(.01)	246	652	1.6	NS	10	.03	.03	.04	NS	.4	4.9
C.V. (%)	20	20	3	1	9	5	5	2	3	6	3

Table 55. Performance of cotton varieties - Rutherford County - 1965

Variety or Line	Lint lbs/A	Seed cotton lbs/A	Lint %	Staple length in.	Bolls/lb. of seed cotton	Fiber Properties: Span Length 66.7% (expressed in in.)	Span Length 50% (expressed in in.)	Span Length 2.5% (expressed in in.)	Uniformity Ratio	Micronaire Fib. wt./in. micrograms	Tensile Strength "Pressley"
Coker 2202	660	1973	33.6	1 1/8	78	.44	.56	1.13	49	5.2	78.5
Coker 230-5908	629	1821	34.5	1 1/8	73	.43	.54	1.13	48	5.2	79.5
Coker 100A(WR)	595	1784	33.5	1 1/8	70	.46	.59	1.18	50	4.7	72.2
Coker Carolina Queen	571	1723	33.0	1 5/32	72	.44	.56	1.14	49	4.8	80.1
Hy-Bee 66	564	1671	33.6	1 1/8	65	.45	.56	1.15	49	4.6	80.8
Pennington Hy-Bee	564	1730	32.5	1 1/8	66	.44	.55	1.14	48	4.8	81.2
Coker 3210	561	1571	35.7	1 1/8	74	.44	.56	1.14	49	4.9	82.0
Coker 2421	559	1682	33.2	1 1/8	77	.46	.58	1.18	50	4.7	87.8
McNair 1032	543	1744	31.2	1 1/8	73	.44	.56	1.11	50	5.0	81.1
Auburn 56	543	1832	29.7	1 1/8	68	.44	.55	1.14	49	4.5	75.6
Mean of Test	521	1596	32.6	1 1/8	69	.45	.56	1.14	49	4.7	79.2
TH 149-R	513	1671	30.5	1 1/8	60	.48	.61	1.20	51	4.6	85.8
Rex Smoothleaf	509	1565	32.6	1 1/8	61	.44	.56	1.13	49	4.5	76.0
Rex	504	1586	31.8	1 1/8	62	.44	.56	1.15	49	4.4	74.4
DeKalb 220	500	1592	31.6	1 1/8	65	.45	.58	1.16	50	4.6	78.1
DeKalb 108	490	1547	31.6	1 1/8	63	.44	.56	1.14	49	4.5	77.8
DeKalb 128	488	1496	32.6	1 1/8	70	.45	.57	1.16	49	4.6	78.1
Deltapine 7139	470	1447	32.3	1 1/8	80	.46	.57	1.14	50	4.7	76.5
Stoneville 213	463	1381	33.6	1 1/8	75	.44	.55	1.11	49	4.9	73.5
Dixie King 6374	463	1338	34.6	1 1/8	62	.45	.56	1.12	49	4.8	80.1
Coker 3903-1	427	1343	31.8	1 1/8	73	.45	.57	1.18	48	4.6	81.4
Deltapine 731	426	1303	32.1	1 1/8	76	.44	.55	1.12	50	4.8	75.8
Dixie King II	416	1314	31.8	1 1/8	58	.44	.56	1.13	49	4.7	79.4
L.S.D. (.05)	109	305	2.6	NS	6	.02	.02	.03	1	.3	2.9
(.01)	144	404	3.4	NS	7	.03	.03	.04	NS	.4	3.8
C.V. (%)	18	17	7	2	7	4	4	2	3	5	3

RESULTS

Varietal performance may vary from year to year and annual results may seem inconsistant; therefore, performance data obtained over a period of years are more reliable than for any one year.

The data presented in Tables 49 and 50 are summary data for various years and locations and indicate how varieties have been performing over a period of years at various locations. A three year average performance is shown for lines and varieties in Table 49.

Data combined over the four locations is shown in Table 51. Individual location data are presented in Tables 52 through 55. Although there were statistical differences for most characters in the individual locations, the performance of a single location can be misleading. For example, there was a highly significant variety X location interaction for lint pounds and pounds of seed cotton. This indicates that varieties failed to respond the same from location to location. There is no definite pattern from location to location, so it would be more reliable to use the data averaged across locations in deciding what variety to plant.

In selecting a variety for planting, characteristics that influence a profitable production should be studied. Amount of lint produced per acre is an important criterion, yet the variety should be resistant to prevalent diseases, particularly fusarium wilt. If the cotton is to be mechanically harvested, then it should mature uniformly and be compact. Seed quality is most important to successful production of cotton. Weak seed do not perform well under adverse weather conditions at planting time. Other plant characteristics considered in selecting a variety of cotton are storm resistance, plant type and boll size. Lint characteristics, such as staple length, gin turnout, and fiber quality affect prices, harvesting costs and market demand.